DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
333 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94105-2197

AUG 08 2001

Regulatory Branch

SUBJECT: File Number 21392N

Mr. Paul Hensley
Program Manager
California Department of Transportation
P.O. Box 23660
Oakland, California 94623-0660

Dear Mr. Hensley:

Enclosed is your signed copy of a Department of the Army permit (Enclosure 1) to place fill in conjunction with the Benicia-Martinez Bridge Project in Contra Costa and Solano Counties, California.

Please complete the appropriate parts of "Notice to Permittee" form (Enclosure 2), and return it to this office. You are responsible for ensuring that the contractors and workers executing the activity authorized herein are knowledgeable with the terms and conditions of this authorization.

Should you have any questions regarding this matter, please call Victoria Alvarez of our Regulatory Branch at 415-977-8472. Please address all correspondence to the Regulatory Branch and refer to the file number at the head of this letter.

Sincerely,

Timothy S. O'Rourke
Lieutenant Colonel, Corps of Engineers
District Engineer

Enclosures

Copy Furnished (w/encl 1 only):

US EPA, San Francisco, CA
US FWS, Sacramento, CA
US NMFS, Santa Rosa, Sacramento, CA
CA RWQCB, Oakland, CA
CA DFG, Yountville, CA
CA BCDC, San Francisco, CA
CA SLC, Sacramento, CA

NOTICE TO PERMITTEE

Please use the forms below to report the dates when you start and finish the work authorized by the enclosed permit. Also if you suspend work for an extended period of time, use the forms below to report the dates you suspended and resumed work. The second copy is for your records. If you find that you cannot complete the work within the time granted by the permit, please apply for a time extension at least one month before your permit expires. If you materially change the plan or scope of the work, it will be necessary for you to submit new drawings and a request for a modification of your permit.
(cut out as needed) ----------

Date:_____

NOTICE OF COMPLETION OF WORK under Department of the Army permit No. 213920N
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated Aug 7, 2001, to place fill in conjunction with the Benicia-Martinez Bridge Project in Contra Costa and Solano Counties, this is to notify you that the work was completed on _____.

Permittee: Mr. Paul Hensley, California Dept of Transportation
Address: P.O. Box 23660, Oakland Ca 94623-0660

Date:_____

NOTICE OF RESUMPTION OF WORK under Department of the Army permit No. 213920N
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated Aug 7, 2001, to place fill in conjunction with the Benicia-Martinez Bridge Project in Contra Costa and Solano Counties, this is to notify you that work was resumed on _____.

Permittee: Mr. Paul Hensley, California Dept of Transportation
Address: P.O. Box 23660, Oakland Ca 94623-0660

Date:_____

NOTICE OF SUSPENSION OF WORK under Department of the Army permit No. 213920N
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated Aug 7, 2001, to place fill in conjunction with the Benicia-Martinez Bridge Project in Contra Costa and Solano Counties, this is to notify you that work was suspended on _____.

Permittee: Mr. Paul Hensley, California Dept of Transportation
Address: P.O. Box 23660, Oakland Ca 94623-0660

Date:_____

NOTICE OF COMMENCEMENT OF WORK under Department of the Army permit No. 213920N
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated Aug 7, 2001, to place fill in conjunction with the Benicia-Martinez Bridge Project in Contra Costa and Solano Counties, this is to notify you that work was commenced on _____.

Permittee: Mr. Paul Hensley, California Dept of Transportation
Address: P.O. Box 23660, Oakland Ca 94623-0660

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Permittee: Mr. Paul Hensley, California Dept of Transportation
Address: P.O. Box 23660, Oakland Ca 94623-0660

DEPARTMENT OF THE ARMY PERMIT

Permittee: California Department of Transportation

Permit No.: 21392N

Issuing Office: San Francisco District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate District or Division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The Permittee is, hereby authorized to place fill and perform work in Corps jurisdiction as shown in the attached Figures for the New Benicia-Martinez Bridge Project. The project is described below:

Summary: Place 35,300 cubic yards (CY) of fill into the Suisun Bay and adjacent wetlands and dredge and dispose of approximately 66,000 CY of sediment (50,000 CY upland disposal and 16,000 CY for aquatic disposal at SF-9 Carquinez Strait Disposal Site) to construct a new bridge across the Carquinez Strait between the cities of Benicia and Martinez along Interstate 680 and Interstate 780 in Contra Costa and Solano Counties, California. The project limits on I-680 are approximately 0.5 mile south of the Mococco Overhead in Contra Costa County to Bayshore Road in Solano County (Figure 1). The project limits on I-780 in Solano County are from the I-680 junction to East 5th Street in Benicia (Figure 1). The project shall result in the permanent loss of 1.4 acre of waters of the U.S. (open water and wetlands) through the placement of 35,300 CY of fill and temporary impacts to 5.9 acres of waters of the U.S. (open water and wetlands) through the placement of 17,600 cubic yards of temporary fill to facilitate project construction. A total of 16,000 CY of sediments removed in the construction of the piles for Piers 6 to 16 is approved for aquatic disposal at the Carquinez Strait Dredge Material Disposal Site (SF-9). In addition, the project calls for the dredging of 50,000 CY from the Carquinez Strait to create an access channel for the Maritime Administration's (MARAD) Suisun Bay Reserve Fleet (SBRF) with subsequent upland disposal of dredged material.

A. CONSTRUCTION OF THE NEW BRIDGE:

The new bridge will be located east of the existing Benicia-Martinez Bridge and the Union Pacific Railroad (formally Southern Pacific Railroad) Bridge (Figure 2 and 3). The new 8,852-foot long bridge shall be constructed approximately 490 feet east of the railroad bridge and parallel to it. The new bridge shall be 82¼ feet wide. At the southern end of the bridge, the Permittee also plans to build a tollbooth facility (Figure 2 ~~and 3~~).

1. Temporary Construction Trestles:

Construction access trestles shall be built along the southern and northern shores of the Carquinez Strait (Figures 4 and 5). The trestles shall be supported with 3.3-foot diameter hollow ½ inch thick steel pipes. Installation of the trestle piles shall result in a temporary fill of 0.1 acre of Corps jurisdictional area (waters of the U.S.). After construction, the trestles shall be completely removed, except in the brackish marsh where the pipes shall be cut 3.3 feet below the mudline as removing them shall result in greater marsh impacts. The north trestle shall require a maximum fill volume of 700 CY and the south trestle shall require a maximum fill volume of 300 CY.

2. Construction of Temporary Falsework and Cofferdams:

As shown on Figure 5 ~~6~~ the superstructure of new bridge at Piers 16 to 18 shall be constructed using pile-supported falsework. Cofferdams shall be constructed around pier locations 6, 16, 17 and 18 to allow for pile cap construction. After construction, the falsework shall be completely removed, except in the brackish marsh where the piles shall be cut off 3.3 feet below the mud line. The falsework (480 CY) and coffer dams (2,400 CY) shall require the collective placement of approximately of 3000 cubic yards of temporary fill within Corps jurisdiction (0.3 acre).

3. Construction of Main Span:

The construction of the main span across the Carquinez Strait calls for placement of piers 6 through 18 to be placed within Corps jurisdiction (Figure 15 ~~8~~). Permanent fill required to construct the bridge within Corps jurisdiction (piles and footings) is 1.4 acres (waters of the U.S. including open water and wetlands) through the placement of approximately 21,400 cubic yards of material.

B. I-680/MARINA VISTA ROAD INTERCHANGE

The I-680/Marina Vista Interchange is located south of the Benicia-Martinez Bridge in Contra Costa County (Figure 7a). Marina Vista Road lies west of I-680 and Waterfront Road lies east of I-680. Mococo Road runs parallel to Marina Vista Road then veers northeast under the Mococo Overhead . The Mococo Overhead consists of northbound and southbound structures. These structures shall be combined and shall carry only southbound traffic. A new structure shall be constructed to carry

northbound traffic. In addition, an at-grade new railroad crossing of Mococo Road shall be located 230 feet to the east of the existing railroad crossing.

1. Construction of the Northbound Mococo Overhead:

The Northbound structure shall be built within Corps jurisdiction as shown on Figure 8. Abutment No. 1 and Bents 2 through 7 occur within the Corps jurisdiction and their construction shall result in the permanent placement of 2,300 cubic yards of fill over 0.05 acre (wetlands). Bent No. 8 and Abutment No. 9 are outside Corps jurisdiction. For the Bulb-T portion of the superstructure, either 18-foot wide pads made from 12-inch by 12-inch wood posts or 24-inch pile supported work platforms shall be used as temporary supports for the bulb-T girders during girder installation. The cast-in-place box girder portion of the superstructure shall require pile supported falsework. In addition, to accomplish construction, an existing drainage channel under the Mococo Overhead Structure (Figure 8 and 9) shall be permanently realigned to avoid the new columns of the Mococo Overhead and its on-ramp structure (Figures 8 and 9).

2. Construction of the Northbound Approach to the Mococo Overhead Structure:

The Northbound Approach to the Mococco Overhead Structure shall be contained by two retaining walls (Figures 7b and 8). The Northbound Approach and the Mococco Overhead Structure are shown on Figures 7b and 8 and the retaining walls are shown on Figures 7b and 8 between Stations 96+20 to 98+66. The roadway fill used for the approach shall consist of lightweight fill to minimize settling. The northbound approach shall require the permanent placement of 5,600 cubic yards of fill within Corps jurisdiction over a 0.2 acre area (wetland).

3. Construction of the Northbound On-Ramp Bridge

The Northbound On-Ramp Bridge shall be pile supported and consist of 2 abutments and 5 bents (Figure 8). The superstructure portion of the on-ramp requires pile-supported falsework that shall be supported using 8-foot wide construction pads made of 12-inch by 12-inch timbers. A total of 500 cubic yards of fill within Corps jurisdiction shall be used to create the northbound on-ramp resulting in permanent impact to 0.05 acre (wetland).

4. Southbound I-680 On-Ramp

The Southbound I-680 on-ramp is the realignment of an existing at-grade on ramp that enters I-680 from Marina Vista Road. As shown on Figure 7b, Area A1, A2 and A3, construction of a portion of the I-680 southbound on-ramp shall require the permanent placement of 300 CY of fill over a 0.05 acre area (wetlands).

An additional, 600 CY of temporary fill will be placed over 0.2 acre of wetlands to facilitate the construction of the Southbound I-680 On-Ramp (Figure 7b Area A1 and Area A2). These temporary fill materials shall be removed at project completion and the area shall be restored to pre-existing conditions.

5. Northbound I-680 Off-Ramp

Construction of the I-680 northbound off-ramp shall require the placement of 3,400 cubic yards of permanent fill over a 0.55 acre area of wetlands habitat (Figure 7b Area B). Temporary impacts to facilitate construction require the placement of 300 cubic yards of temporary fill over a 0.1 acre area of wetland habitat (Figure 7b Area C). All temporary fill shall be removed at project completion and the area shall be restored to pre-construction conditions.

6. Temporary Impact at proposed Mococo Overhead

As shown on Figure 8 (Area D, E2, F, J, G, H and I), the area under the proposed structure and 100 feet to the east shall be temporarily filled to facilitate project construction. A total of 13,000 CY of temporary fill shall be placed over a 4.1 acre area within Corps jurisdiction (wetland) (Figure 8). Instead of temporary fill, due to the presence of soft substrates (mud), temporary trestles (pile supported) may be used. The temporary fill shall remain in place for the duration of construction (3 years) and shall be removed when the temporary access is no longer needed or at project completion, whichever is earlier. Where underground utility lines are present, temporary trestles shall be used and the trestle piles shall be cut 3.3 feet below ground surface mudline upon removal of the trestles. To facilitate the placement of the temporary fill and trestles needed for construction access, a portion of existing drainage channel prior to being realigned shall be temporarily diverted into a culvert around the construction area during project construction (Figure 9).

Temporary impacts at the existing Mococo overhead shall occur beneath the closure pour between the two existing structures where falsework shall be used to temporarily support the reconstructed closure pour. Pads for the falsework shall be constructed by 12 by 12 timbers. Tthe area of temporary impact under the closure pour is 1.1 acres as shown on Figure 8 (Area X).

7. Railroad Crossing

An at-grade railroad crossing may also be relocated to facilitate project construction and to accommodate project features. The existing railroad crossing, located between two existing signalized intersections on Marina Vista Road, will be relocated to a signalized intersection at Fairview Gate (a private road) approximately 230 feet to the east (Figure 10). The new at-grade crossing will bisect a wetland area (Figure 10), however, culverts will be installed to maintain the hydrologic integrity of the bisected wetland. Construction of the new crossing shall result in the placement of 720 cubic yards of permanent fill over 0.10 acre of wetlands.

C. I-680/I-780 INTERCHANGE

1. Southbound I-680 Connector and Northbound I-680 Connector

Project impacts to Corps jurisdiction shall also include the construction of the Southbound and Northbound I-680 Connectors (Figure 11 and 12). The southbound connector embankment shall

encroach into two freshwater marsh areas while the northbound connector embankment shall encroach into the same wetland areas and result in the permanent fill of two additional freshwater marshes (Figure 11 and 12). A total of 1,100 CY of permanent fill shall be placed over a 0.1 acre area of wetlands to construct both southbound and northbound I-680 connectors.

D. MARITIME ADMINISTRATION (MARAD) SUISUN BAY RESERVE FLEET

1. Access Channel Dredging

The Permittee shall dredge a channel varying from 26 to 31 feet below Mean Lower Low Water (MLLW) to provide for vessel movements. The channel shall be approximately 2,000 feet long (southwest to northeast) and 600 feet wide (Figure 13 a, b and c). The channel dredging will take place prior to the onset of bridge construction in deep water. Approximately 50,000 CY of material will be dredged to construct the channel and dredged material will be disposed of in an upland location (outside Corps jurisdiction).

E. MITIGATION SITE

The existing wetlands on the mitigation site shall be graded, an existing drainage channel shall be partially filled and rock slope protection shall be placed around the new culverts on the west side of the Union Pacific Railroad. An intake channel shall be constructed from the eastern side of the Union Pacific Railroad property to the Suisun Bay. A temporary access road/platform using permeable material over geotextile fabric or steel plates shall be used during construction of the intake channel.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **August 1, 2010** If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

7. You understand and agree that, if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, you will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expenses to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Special Conditions:

Substrate Impact Mitigation:

1. Dredging shall be confined to the smallest area needed to accomplish the work.

2. All dredging, movement of dredged materials and aquatic disposal shall be performed in conformance with Special Conditions to Permit Number 21392N (Attached).

3. The Permittee must allow the Corps to board any vessels and observe dredging operations at any time.

4. The Permittee shall notify the Corps in writing a minimum of 30 days prior to the onset of upland disposal. The Permittee shall identify the upland disposal site and receive prior written approval from the Corps prior to initiation of disposal.

Water Quality Impact Mitigation:

1. The Permittee shall submit a copy of the Contractor's stormwater pollution prevention plan (SWPPP) to the Corps for review. The Corps shall review the SWPPP and provide written comments within 4 week of receipt of the document. If provided within the specified timeframe (4 weeks), all Corps comments must be incorporated into the SWPPP that will be implemented at the project site.

2. Any sunken debris resulting from project construction shall be temporarily marked with buoys and removed at the earliest opportunity.

Wetland Impact Mitigation:

1. Restoration of the mitigation site shown in Figure 1 and Figure 15 shall be conducted in accordance with the Final Habitat Mitigation and Monitoring Plan that shall be submitted to the Corps for final review and approval on or before December 31, 2001. The plan shall be developed in close coordination with Corps regulatory staff and must receive Corps written approval. If the final mitigation plan is not submitted on or before December 31, 2001 the Corps may suspend the Department of the Army authorization for the project until the plan is completed. The Final Habitat Mitigation and Monitoring Plan shall at a minimum include:
   a. A pre-construction site survey data showing existing site elevations.
   b. A copy of the final grading plan
   c. A detailed description of the method to monitor and correct, if necessary, the stability of tidal channels entering the site.
   d. A detailed description of hydrologic monitoring proposed for the site (including tidal channels), maintenance activities and remedial actions that may be required.
   e. A detailed description and map showing the location of CDFG-managed lands to the north of the intake channel.
   f. A detailed description of how tidal prism volumes, sediment loads and channel cross sections will be monitored, on what schedule and the expected parameters leading to overall mitigation success.
   g. A description of whether or not planting will occur at the site or if plant establishment is expected to occur with natural recruitment.
   h. An explanation of what method will be used to control weed encroachment.
   i. Revise the plan to reflect a 10 year monitoring period with the first 5 years calling for intensive, routine monitoring described in the mitigation plan and years 6-10 including annual monitoring and remedial measures necessary to ensure the long-term success of the site
   j. Delete all references to the project manager determining the collection of data at the site. All monitoring parameters, data collection and reporting shall be agreed upon in advance by resource and regulatory agencies.
   k. Provide additional discussion relative to water quality monitoring at the mitigation site. Describe how, when and where samples will be collected and specify exactly what parameters will be evaluated and reported.
   l. Provide additional information regarding the proposed vegetation monitoring including the parameters that will be measured and specific information regarding where monitoring will occur (specify transects) location of photograph points and the monitoring and reporting schedule.
   m. Provide additional information regarding fish surveys and monitoring. Include sampling techniques, location and duration of sampling and schedule for reporting.
   n. Provide additional information regarding bird surveys and monitoring. Include sampling techniques, location and duration of sampling and schedule for reporting.
   o. For all monitoring parameters evaluated at the site, please include a description of how the data will be used to characterize the mitigation site success. Also provide a table, describing the

exact monitoring schedule that will be followed at the site including the schedule for all monitoring activities and dates when monitoring reports will be submitted to each responsible resource and regulatory agency.

p. Provide a description of how the site will be maintained/managed after the establishment of the mitigation site. Please specify ownership status and long-term (50 years) stewardship requirements.

Endangered Species Impact Mitigation:

1. The Permittee shall abide by all terms and conditions set forth by the FWS as described in the BO dated August 19, 1996 (attached), BO Amendment dated February 21, 1997 and letter modifying work windows dated January 9, 2001(attached) and any additional requirements set forth by the FWS for the project in the future.

2. The Permittee shall abide by all terms and conditions set forth by the NMFS in informal consultation letters dated May 28, 1996 (attached), November 15, 2000 and August 1, 2001 (attached) and any additional requirements set forth by the NMFS for the project in the future.

Construction Requirements

1. A biological monitor shall be retained by the Permittee to perform daily inspections of the project site for the duration of construction activities to ensure compliance with the terms and conditions of this permit. A log of all inspections shall be maintained by the monitor and be made available to the Corps upon request.

2. All temporary fill (except trestle and falsework piles in wetlands that will be cut off 3.3 feet below the mudline) will be removed at the completion of project construction and the area will be restored to pre-construction contours.

3. All temporary fill placed for project construction shall be clean fill and shall be removed when the temporary fill is no longer needed or at project completion, whichever is earlier.

4. The contractor shall supply the Corps with the final trestle and falsework design prior to the onset of project construction. Final drawings of all the temporary structures: construction trestles, falsework and cofferdams must be submitted to this office at least one month prior to the onset of construction of the temporary structures.

5. Caltrans shall provide annual schedules of the construction and removal of all temporary structures and fill on **June 30th each year.**

6. For all temporary fill areas, original contours shall be reestablished upon removal of temporary fill in wetland areas.

7. All temporary impact areas shall be monitored twice yearly for a five year period following restoration of project contours, establishment of hydrology and planting to ensure that the wetlands temporarily impacted by project construction have become reestablished. A report documenting this

monitoring shall be submitted to the USACE on **June 30th of each year.**

Sand Dredging Operations:

1. To avoid disturbance of shallow shoal areas and entrainment of juvenile fish species, the Permittee shall conduct dredging operations in water depths greater than 20 feet mean lower low water (MLLW) and employ the 'potholing' method of dredging by burying the head of the suction device in the substrate.

2. The Permittee shall allow sand dredging operations, equipment, and off-loading areas to be inspected by Corps staff and by personnel of other Federal and State agencies responsible for the management of aquatic resources.

3. The Corps reserves the right to suspend or limit dredging operations, if concentrations of toxins or heavy metals in the overflow plume exceed established water quality standards, or substrate monitoring demonstrates the level of sand depletion causes adverse impacts to other aquatic resources.

4. The Permittee shall obtain written approval from the Corps for the upland disposal site for excavated materials from the MARAD access channel dredging prior to the onset of disposal activities.

Dredging Requirements

1. See attached additional Special Conditions to Permit Number 21392N

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. Limits of this authorization:

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Permittee's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate. (See Item 4 above.)

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the

authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

7. You understand and agree that, if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the structural work or obstructions caused thereby, without expenses to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

PERMITTEE _____ DATE 8/9/01

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

DISTRICT ENGINEER _____ DATE 9 Aug 01

For

Timothy S. O'Rourke
Lieutenant Colonel, Corps of Engineers
District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

TRANSFEREE _____ DATE _____

SPECIAL CONDITIONS TO PERMIT NUMBER 21392N

1. To provide notification to the maritime community of activities affecting navigation, the permittee shall provide in writing to the Commander (POW), 11th Coast Guard District, Bldg 50-6, Coast Guard Island, Alameda, California 94501-5100,(POC: Operations Officer, Aids to Navigation Section, PH:510-437-2969, FAX: 510-437-5836), the following information at least two weeks before commencing work:

a. Name and telephone number of the project manager.

b. Size and placement of any floating construction equipment.

c. Radio telephone frequencies and call signs of any marine equipment.

d. Work start and completion dates.

2. The Coast Guard Captain of the Port (COTP) of San Francisco Bay may require modifications to marine construction equipment deployment or mooring systems to safeguard navigation while work is in progress. Upon receipt of the notification to start, the Coast Guard will send a copy of the permittee's letter to the COTP for review.

3. All vessels operated for disposal of dredged material are required to participate in the Coast Guard's Vessel Traffic Control Service (VTS). Five minutes before each departure, the permittee shall notify the VTS by radio, via Channel 14, of the following: The name of vessel; time of departure from dredge site; and time of departure from disposal site.

4. When utilizing the Carquinez Disposal Site (SF-9), the permittee shall dispose of all dredged material within a rectangular area, 1000 feet by 2000 feet, long axis bearing 050 true, and center at latitude 38°03'50"N; longitude 122°15'55"W. The specific location within the disposal area will be determined by the District Engineer upon receipt of the Dredging Operation Plan.

5. The permittee shall submit to Chief, Operations and Readiness Division, ATTN: Regulatory Branch, U.S. Army Corps of Engineers, 333 Market Street, suite 812, San Francisco, California 94105-2197, the following reports for review and comment:

a. <u>Dredge Material Analysis</u>: Submit, for approval, no earlier than 60 days prior to proposed commencement of any authorized successive dredging episodes, dredge material analysis (Chemical and Physical), sampling and testing

information. **Please include the Corps permit number and dredge episode number with this submittal.** Also submit Regional Water Quality Control Board water quality certification or waiver for disposal of the material. For each dredging episode, the permittee shall obtain the approval of the District Engineer for formulating specific sediment testing procedures for the Dredge Material Analysis. The testing protocol will be in accordance with the testing guidelines as published in the Corps and U.S. Environmental Protection Agency publication entitled, "Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual" (The Inland Testing Manual or ITM), dated February 1998, and subsequent amendments thereto.

b. Dredging Operation Plan: Submit, for approval by this office, no earlier than 60 calendar days and no later than 20 calendar days before the proposed commencement of dredging, a plan which includes the following: **Corps permit number, dredge episode number**, a copy of the dredging contract or description of the work under which the contractor will do the permitted work; name and telephone numbers of the dredging contractor's representative on site; dredging start and completion dates; names of vessel; dump scow numbers or identification; bin or barge capacities; identification of work as either maintenance dredging or new dredging; discussion of proposed dredging procedures, as governed under Special Condition No. 6, with detailed drawings or specifications of the grid or centrifugal pump system; quantity of material to be removed; dredging design depth and typical cross section including overdepth; and date of last dredging episode and design depth. The dredging Operational Plan shall also provide the following information:

1) The controls being established to insure that dredging operations occur within the limits defined by the channel dimensions and typical channel section. The horizontal and vertical positioning systems being utilized must be indicated as noted in No.3 below.

2) The controls being established to insure that disposal of the dredged material at the disposal site is at the assigned location and depth. The horizontal and vertical positioning systems being utilized must be indicated as noted in No.3 below.

3) Method of determining electronic positioning of dredge or dump scow during entire dredging operation at dredge site, disposal site and en route to and from disposal site.

Please note that failure to provide all of the above information may result in delays to your project. When your dredge operation plan has been approved, you will receive a written authorization to commence with your project.

c. Before Dredging Survey: Submit no earlier than 60 calendar days and no later than 20 calendar days before commencement of dredging, a survey with accuracy to one-tenth foot which delineates the following: areas to be dredged with overdepth allowances; existing depths; estimated quantities to be dredged for the project; and estimated quantities for overdepth. **All surveys shall be signed by the permittee to certify their accuracy. Please include the Corps permit number and dredge episode number.**

Please note that failure to provide all the above information may result in delays to your project.

d. Solid Debris Management Plan: Submit no earlier than 60 calendar days and no later than 20 calendar days before commencement of work, a plan which describes measures to ensure that solid debris generated during any authorized demolition or construction operation is retained and properly disposed of in areas not under Corps jurisdiction. At a minimum, the plan shall include the following: source and expected type of debris; debris retrieval method; **Corps permit number and dredge episode number;** disposal method and site; schedule of disposal operations; and debris containment method to be used, if floatable debris is involved.

Please note that failure to provide all the above information may result in delays to your project.

e. Disposal Site Verification Log (DSVL): Submit on a weekly basis by noon Monday, the two-page log which enumerates work accomplished during the preceding week to Corps of Engineers, Operations and Readiness Division at the above address or FAX # (415) 977-8495, Attn: Mr. David Dwinell. **Please include the Corps permit number and dredge episode number.** The log will be provided when the Corps approves the Dredge Operation Plan and authorizes the commencement of the dredging.

f. Overflow requirements:

1. During transportation from the dredging site to the disposal site, no material shall be permitted to overflow, leak or spill from barge, bins or dump scows.

2. During dredging operations, overflow shall be limited to a maximum of 15 minutes for hopper dredge only. Adjustments to the dredging operation may be required to insure that once overflow commences, it will not exceed the 15 minute limit.

3. In approved sand dredging, overflow will not exceed 15 minutes or the economic load, whichever occurs first.

g. Post Dredging Survey: Submit, within 15 days of the last disposal activity (last is defined as that activity after which no further activity occurs for 15 calendar days), a survey with accuracy to one-tenth foot which delineates the areas dredged and the dredged depths. **Also, include the Corps permit number, dredge episode number, dates of dredging commencement and completion, actual quantities dredged for the project, and actual quantities of overdepth.** The permittee shall substantiate the total quantity dredged by including calculations used to determine the volume difference (in cubic yards) between the Before and Post Dredging Surveys and explain any variation in quantities greater than 15% beyond estimated quantities. **All surveys shall be accomplished by a licensed surveyor and signed by the permittee to certify their accuracy.** A copy of the post dredge survey should be sent to the National Ocean Service for chart updating: NOAA/National Ocean Service, Map and Chart Branch, (Attention: N/CG2211), SSMC3, Room 6211, 1315 East-West Highway, Silver Spring, Maryland 20910.

6. The permittee shall ensure that all dredged material is slurried prior to disposal to prevent any accumulation or build up of material at the disposal site. All dredged material shall be slurried in one of the following manners:

a. Dredged material will be either pumped with a centrifugal pump prior to leaving the dredge site for the disposal site; or,

b. If the material is clamshell dredged, passed through a debris grid, with a maximum opening size of 12 inches by 12 inches which will cover the entire loading area of the dump scow. Everything that does not pass through the grid will be considered solid debris and shall be disposed of in areas outside of Corps jurisdiction. All such material shall be promptly removed from the grid at the end of each 8 hour shift or sooner.

7. **The permittee or dredge contractor shall inform this office**

when a dredge episode actually commences, is suspended (suspension is when the dredge contractor leaves the dredge site for more than

48 hours for reasons other than equipment maintenance), is restarted and the actual date of completion. Each notification should include the Corps permit number and dredge episode number. The information can be sent, to the attention Dredging Coordinator, in writing to the Corps of Engineers, Regulatory Branch, at the above address; FAXed to (415) 977-8483; or via telephone message at (415) 977-8471.

8. The permittee, as directed by the District Engineer under authority pursuant to the policies and procedures of 33 CFR 325.7, may be required to modify disposal schedules and/or monthly disposal quantities for particular dredging episodes.

9. The permittee shall allow the dredging area and equipment to be inspected by the Corps staff upon request.

10. For each dredging episode, the permittee shall be responsible for obtaining a letter of water quality certification or waiver from the Regional Water Control Quality Board (RWQCB) and authorization from the Bay Conservation and Development Commission (BCDC). Water quality certification and BCDC authorization will be a prerequisite to the District Engineer's decision to approve or disapprove specific dredging episodes pursuant to the policies and 33 CFR 325.2(b)(1)(ii) and 325.2(b)(2)(ii).

11. For each dredging episode, the permittee shall provide a copy of the Dredge Material Analysis to the Environmental Protection Agency, Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game (DF&G) concurrent with the RWQCB and Corps' receipt of this information. Agency comments submitted to the Corps within 15 calendar days thereafter will be given full consideration in the decision on dredged material disposal.

12. If a land, ocean, or other aquatic disposal site becomes available for use during the life of the permit, the permittee shall evaluate these disposal alternatives, taking into consideration cost, existing technology, and logistics in light of the overall project purpose to facilitate compliance with the 404(b)(1) Guidelines. This evaluation shall be submitted to the Corps at least 60 calendar days before commencement of subsequent dredging episodes. The District Engineer, upon review of this information and after consultation with other resource agencies, may direct the permittee to use such sites in lieu of or in addition to the Carquinez Disposal Site under authority of 33 CFR 325.7 and 40 CFR 230.10(a).

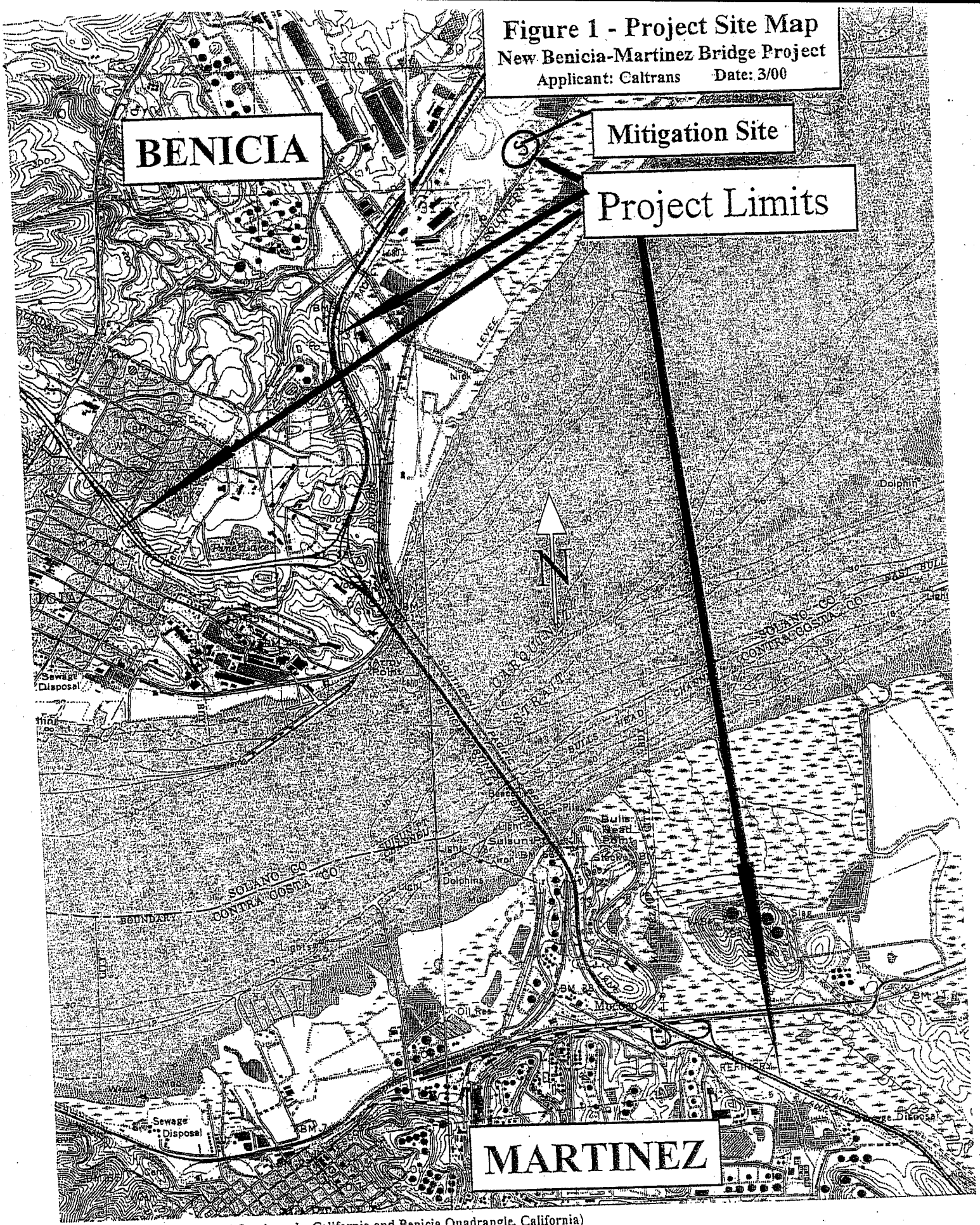


Figure 1 - Project Site Map
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00

SOURCE: USGS (Vine Hill Quadrangle, California and Benicia Quadrangle, California)

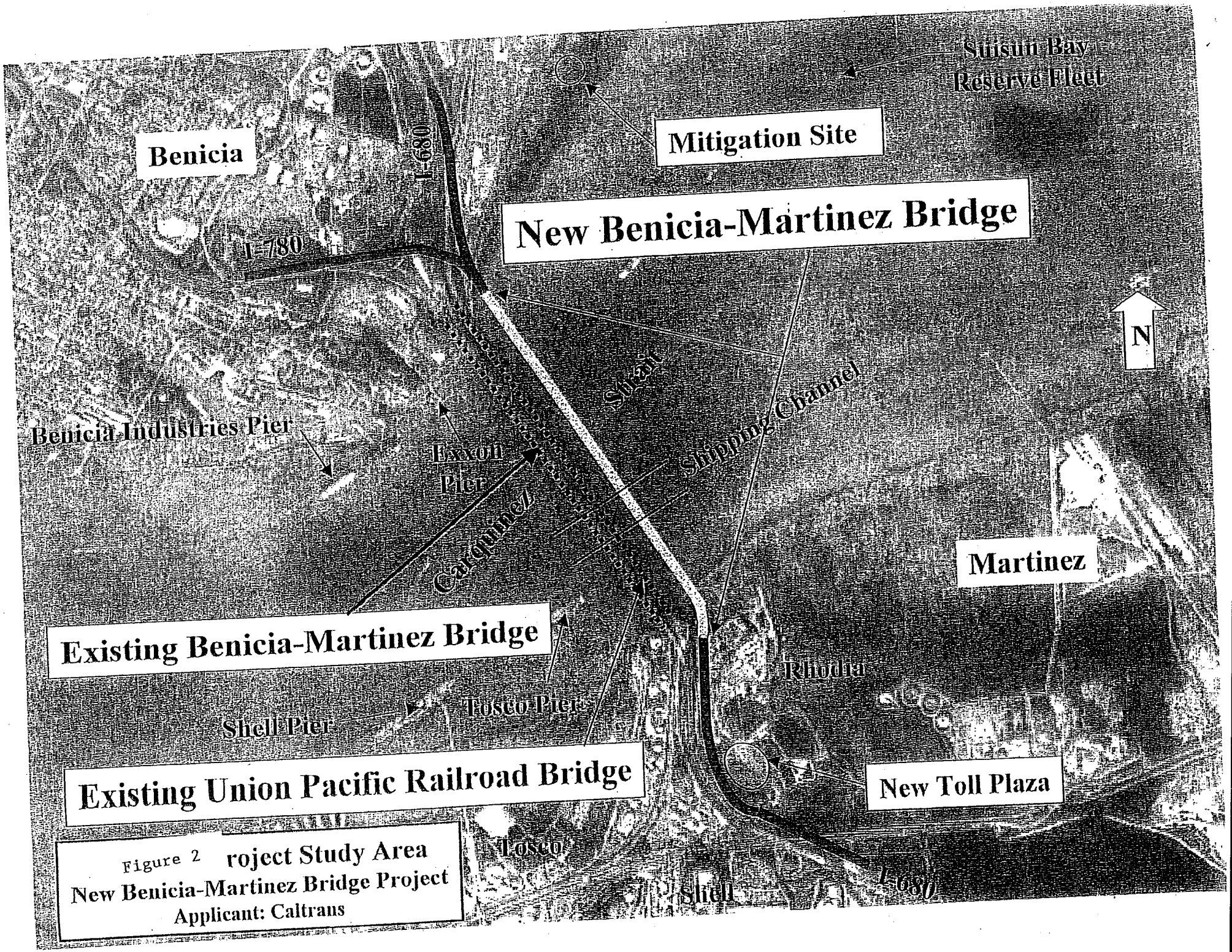
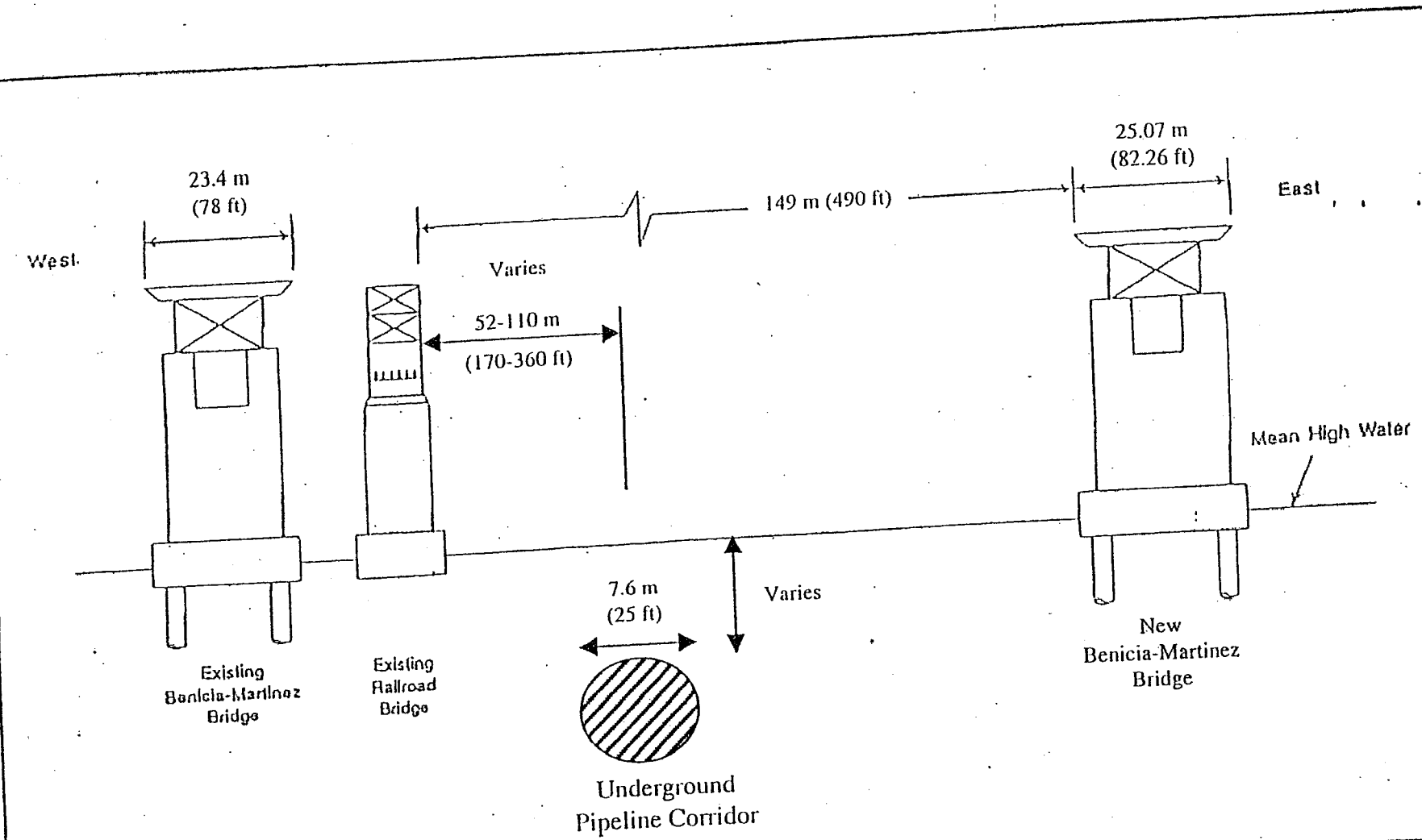


Figure 2 roject Study Area
New Benicia-Martinez Bridge Project
Applicant: Caltrans



Key

m = meters

NOT TO SCALE

NOTE: Viewed South to North

Figure 3 'chematic Relationship of the New Bridge

New Benicia-Martinez Bridge Project

Applicant: Caltrans Date: 3/00

Caltrans

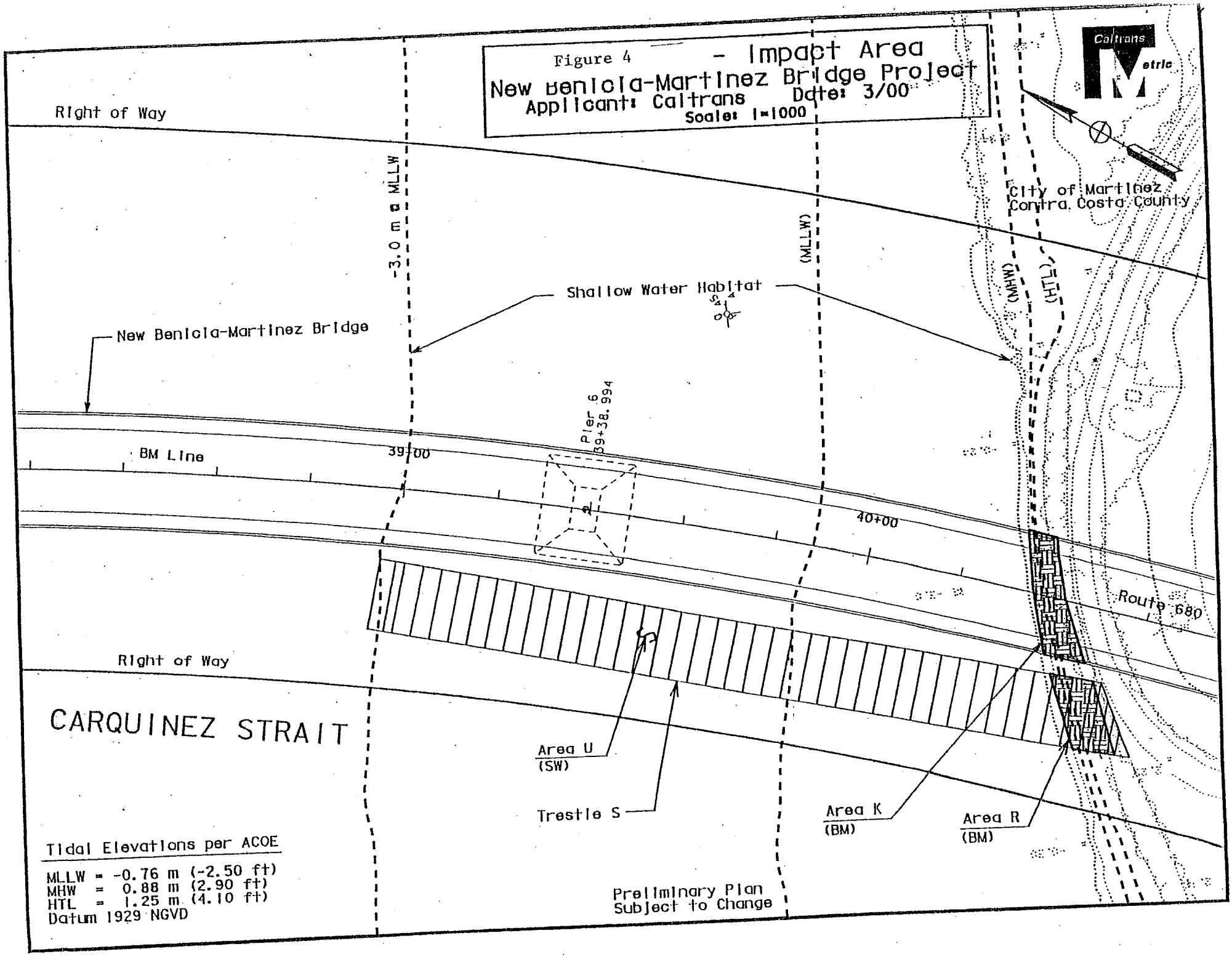
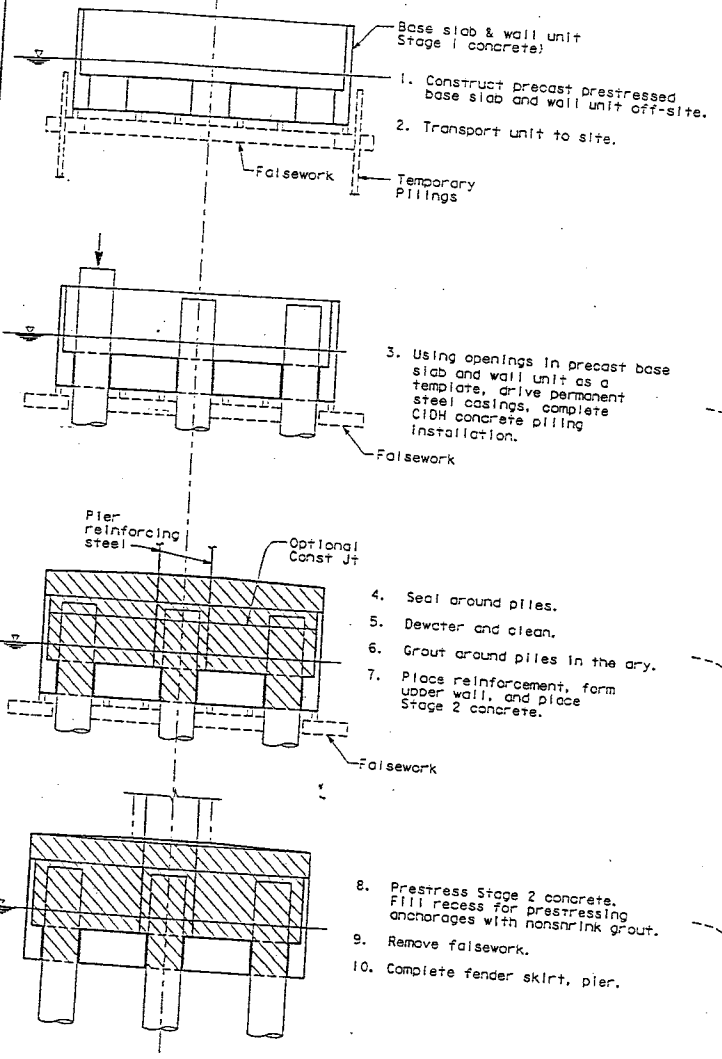


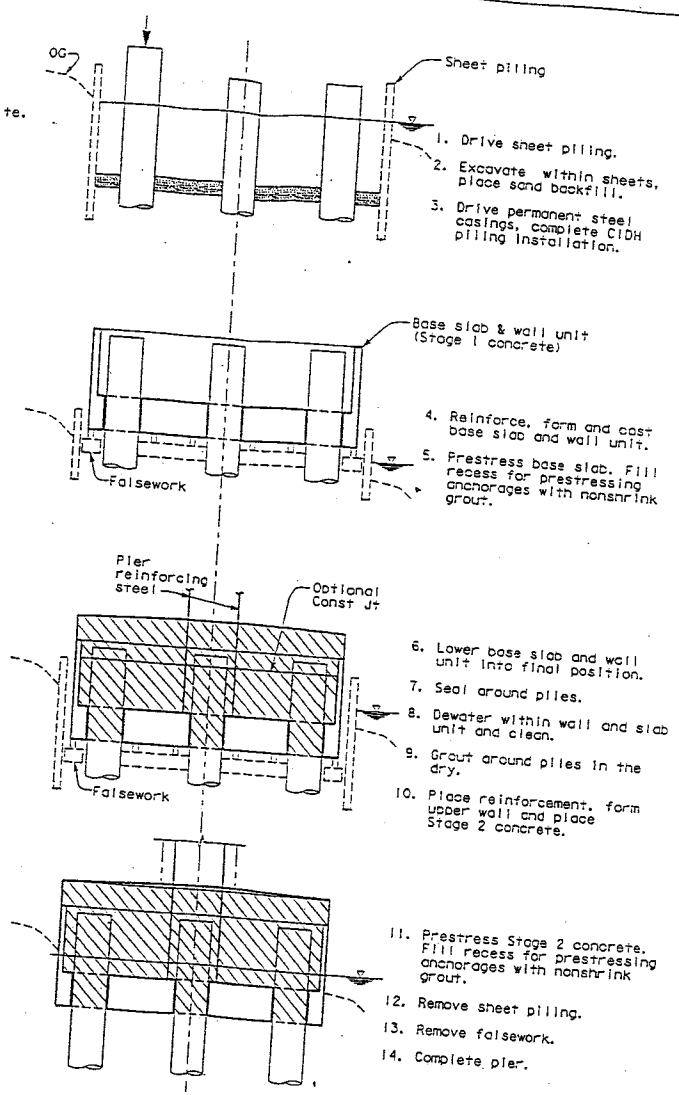
Figure 4 - Impact Area
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00
Scale: 1=1000
Caltrans
Metric
Right of Way
-3.0 m @ MLLW
(MLLW)
(MHW)
(HTL)
City of Martinez
Contra Costa County
Shallow Water Habitat
New Benicia-Martinez Bridge
Pier 6
39+38.994
BM Line
39+00
40+00
Route 680
Right of Way
CARQUINEZ STRAIT
Area U
(SW)
Trestle S
Area K
(BM)
Area R
(BM)
Tidal Elevations per ACOE
MLLW = -0.76 m (-2.50 ft)
MHW = 0.88 m (2.90 ft)
HTL = 1.25 m (4.10 ft)
Datum 1929 NGVD
Preliminary Plan
Subject to Change



PIER 15 THRU PIER 6

SUBSTRUCTURE - CONSTRUCTION SEQUENCE

No Scale



PIER 17, PIER 16

SUBSTRUCTURE - CONSTRUCTION SEQUENCE

No Scale

Caltrans Metric

DIST.	COUNTY	ROUTE	POST km TOTAL PROJECT
04	CC/Sol	680	

REGISTERED CIVIL ENGINEER

03/16/00

PLANS APPROVAL DATE

T.Y.LIN / CH2M HILL
825 BATTERY STREET
SAN FRANCISCO, CA 94111

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF COPIES OF THIS PLAN SHEET.

Pier 17 thru Pier 6 Substructure Construction Sequence Not

1. One possible conceptual alternative for constructing the footings at Pier 15 through Pier 6 is shown. Others are possible. Not all details or required falsework members are shown. The Stage 1 base slab and wall unit has been designed to support its own dead load (Stage 1 concrete) and the dead and construction live loads associated with placement of Stage 2 concrete assuming continuous falsework is provided around the perimeter of each pile to provide annular support. Falsework shall be designed to support all of the dead and construction live loads associated with placement of Stage 1 concrete. Other methods or configurations of falsework support are possib If Contractor elects to use other methods or configuratic Contractor shall be responsible for the analysis, design, and construction of any modifications required to the Stage 1 base slab and wall unit for the revised load and support conditions. Other proposed methods shall be submitted to the Engineer for approval.
2. Stage 2 concrete shall not be placed until nonshrink grout around piles has reached its specified 28 day compressive strength (52 MPa).
3. Falsework shall remain in place until Stage 2 concrete reaches its specified 28 day compressive strength.

Design Data for Pier 17 thru Pier 6: Wall unit:

Case I - Design for equivalent fluid pressure=10.1 kPa/m (water to top of wall) fc=14 MPa; exposure and crack width factor, Z=17500 KN/m (water face)

Case II - Design for equivalent fluid pressure=23.6 kPa/m Stage 1 plus Stage 2 concrete-Ultimate Strength Design)

Design Data for Pier 17 thru Pier 6: Slab unit:

Case I - Design for equivalent fluid pressure=23.6 kPa/m (Stage 1 plus Stage 2 concrete plus 1kPa construction live load (with zero tension)

LEGEND:

- Stage 1 concrete
- Stage 2 concrete
- Sand backfill

All dimensions are in millimeters unless otherwise shown

Figure 6

DESIGN OVERSIGHT			
SURVEY DATE			
DESIGN	BY J. Aldrich	CHECKED H. Strandgaard	
DETAILS	BY J. Tai	CHECKED H. Strandgaard	
QUANTITIES	BY	CHECKED	

Pr/BM/04-00603V cecon01.dgn

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

M. Olmer
PROJECT ENGINEER

BRIDGE No.	BENICIA MARTINEZ BRIDGE & OH
28-0153R	
POST km	SUBSTRUCTURE -

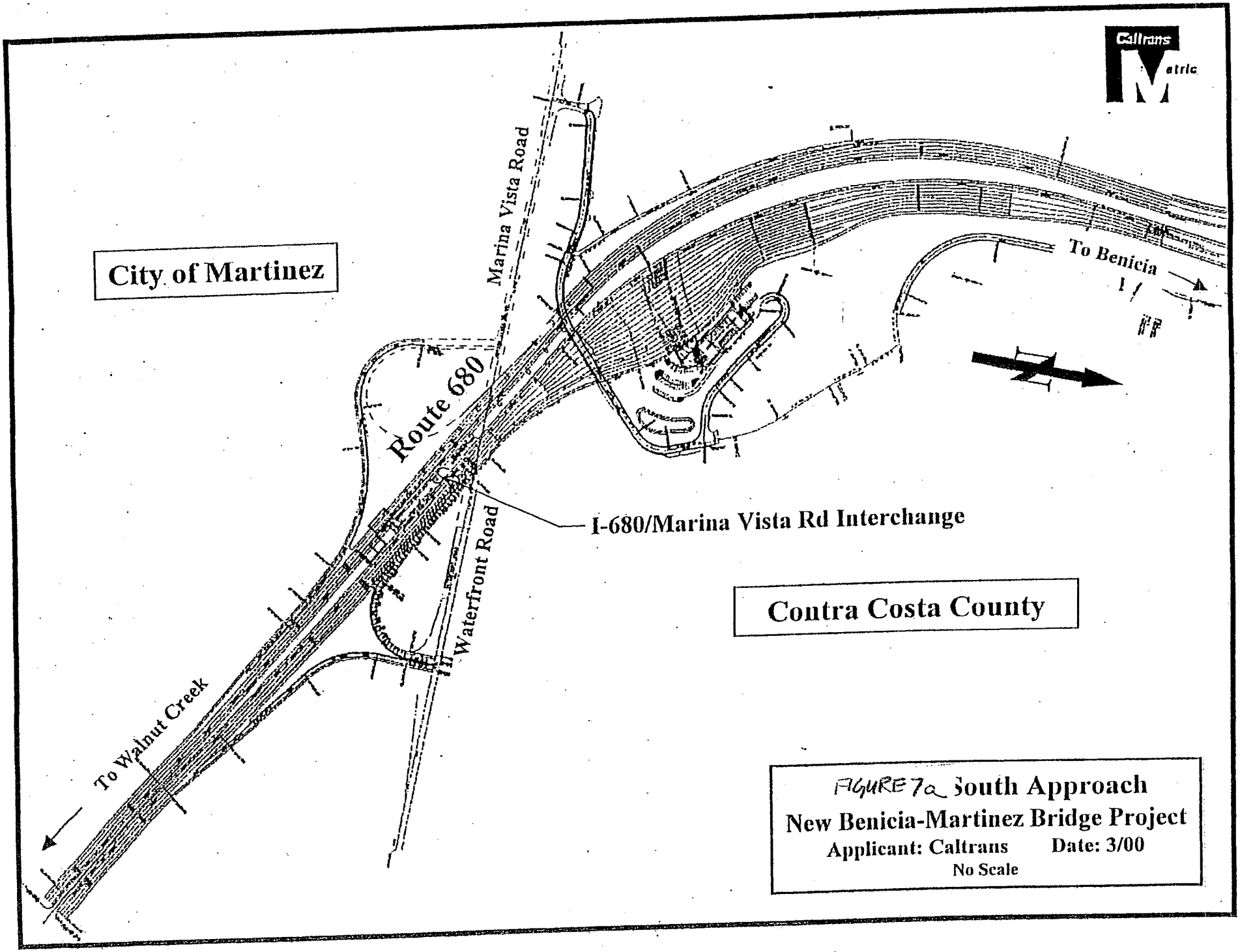
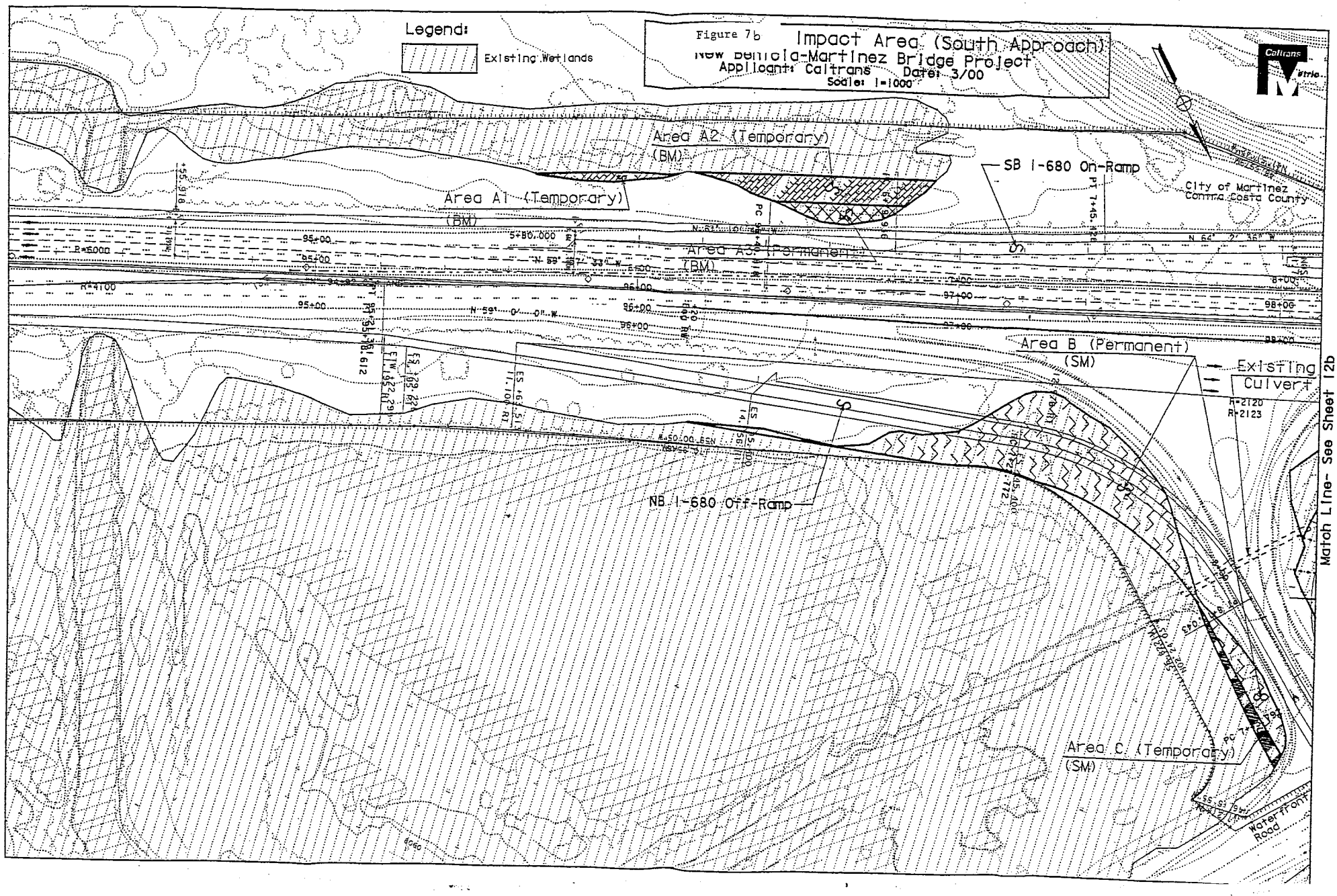


FIGURE 7a South Approach
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00
No Scale


Legend:
Existing Wetlands
Figure 7b Impact Area (South Approach)
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00
Scale: 1=1000
Caltrans
District 4
Area A2 (Temporary)
(BM)
Area A1 (Temporary)
(BM)
Area A3 (Permanent)
(BM)
SB I-680 On-Ramp
City of Martinez
Contra Costa County
Area B (Permanent)
(SM)
Existing Culvert
NB I-680 Off-Ramp
Area C (Temporary)
(SM)
Waterfront Road
Match Line- See Sheet 12b

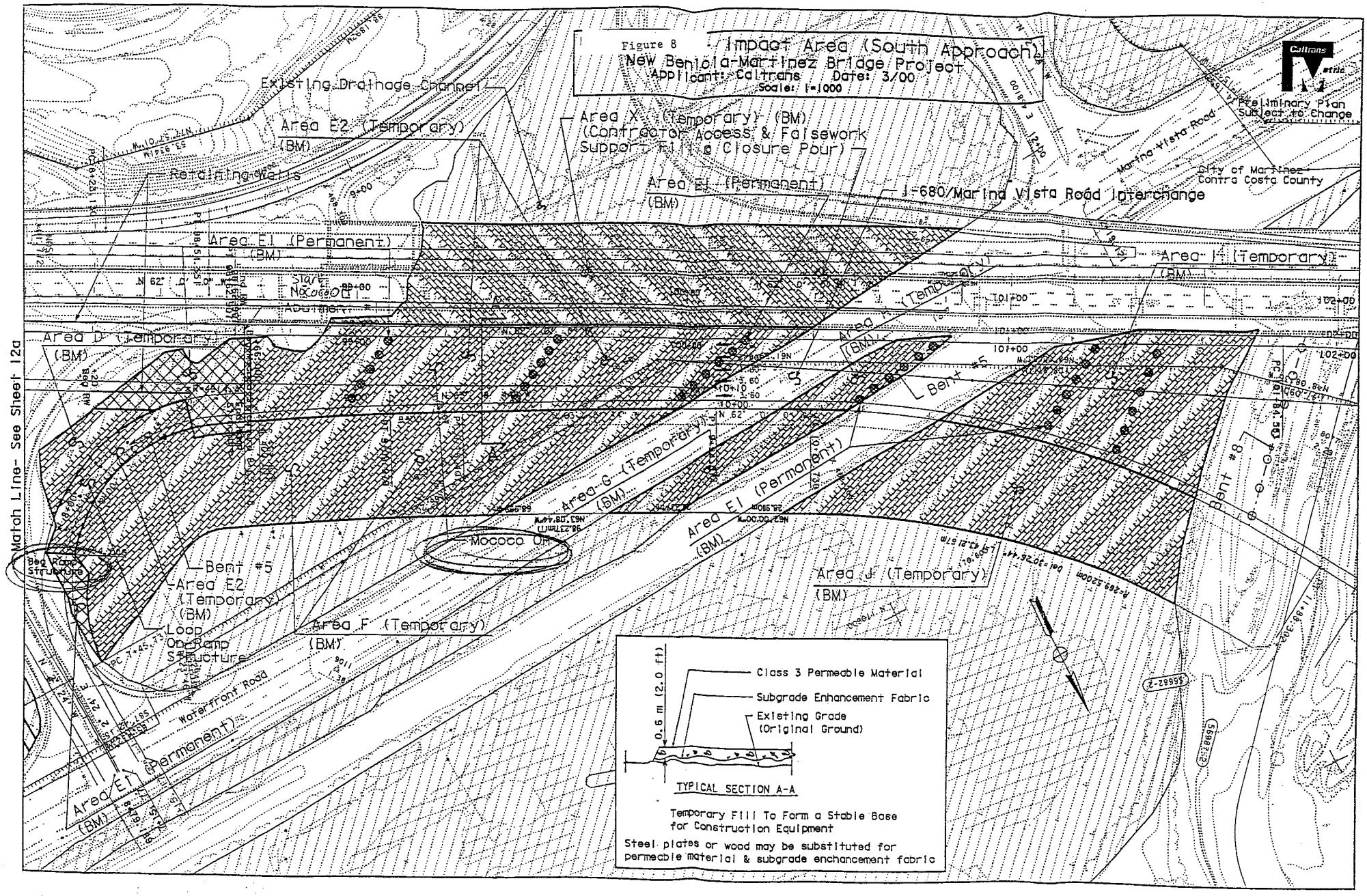


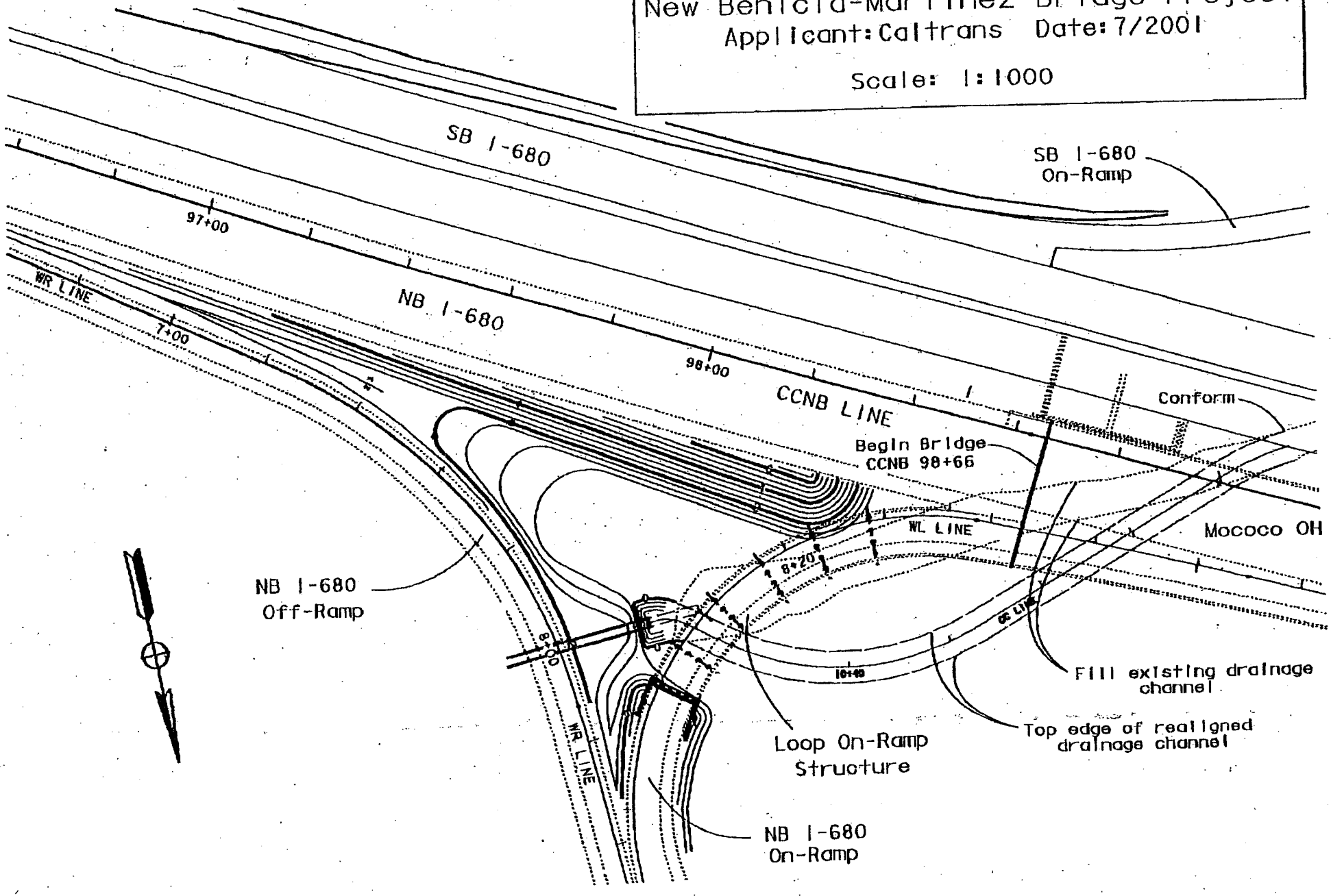
Figure 8
Impact Area (South Approach)
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00
Scale: 1=1000
Caltrans
Preliminary Plan
Subject to Change
Existing Drainage Channel
Area E2 (Temporary)
(BM)
Retaining Walls
Area X (Temporary) (BM)
(Contractor Access & Falsework
Support - Fill @ Closure Pour)
Area E1 (Permanent)
(BM)
I-680/Marina Vista Road Interchange
Marina Vista Road
City of Martinez
Contra Costa County
Area E1 (Permanent)
(BM)
Area I (Temporary)
(BM)
Area D (Temporary)
(BM)
Area H (Temporary)
(BM)
Area G (Temporary)
(BM)
Area E1 (Permanent)
(BM)
Area J (Temporary)
(BM)
Mococo Off
Bent #5
Bent #8
Area E2
(Temporary)
(BM)
Loop
On/Ramp
Structure
Area F (Temporary)
(BM)
Waterfront Road
Area E1 (Permanent)
(BM)
Beg Ramp
Structure
Match Line- See Sheet 12a
Class 3 Permeable Material
Subgrade Enhancement Fabric
Existing Grade
(Original Ground)
0.6 m (2.0 ft)
TYPICAL SECTION A-A
Temporary Fill To Form a Stable Base
for Construction Equipment
Steel plates or wood may be substituted for
permeable material & subgrade enchancement fabric

Figure 9

REALIGNED DRAINAGE CHANNEL (South Approach)

New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 7/2001

Scale: 1:1000



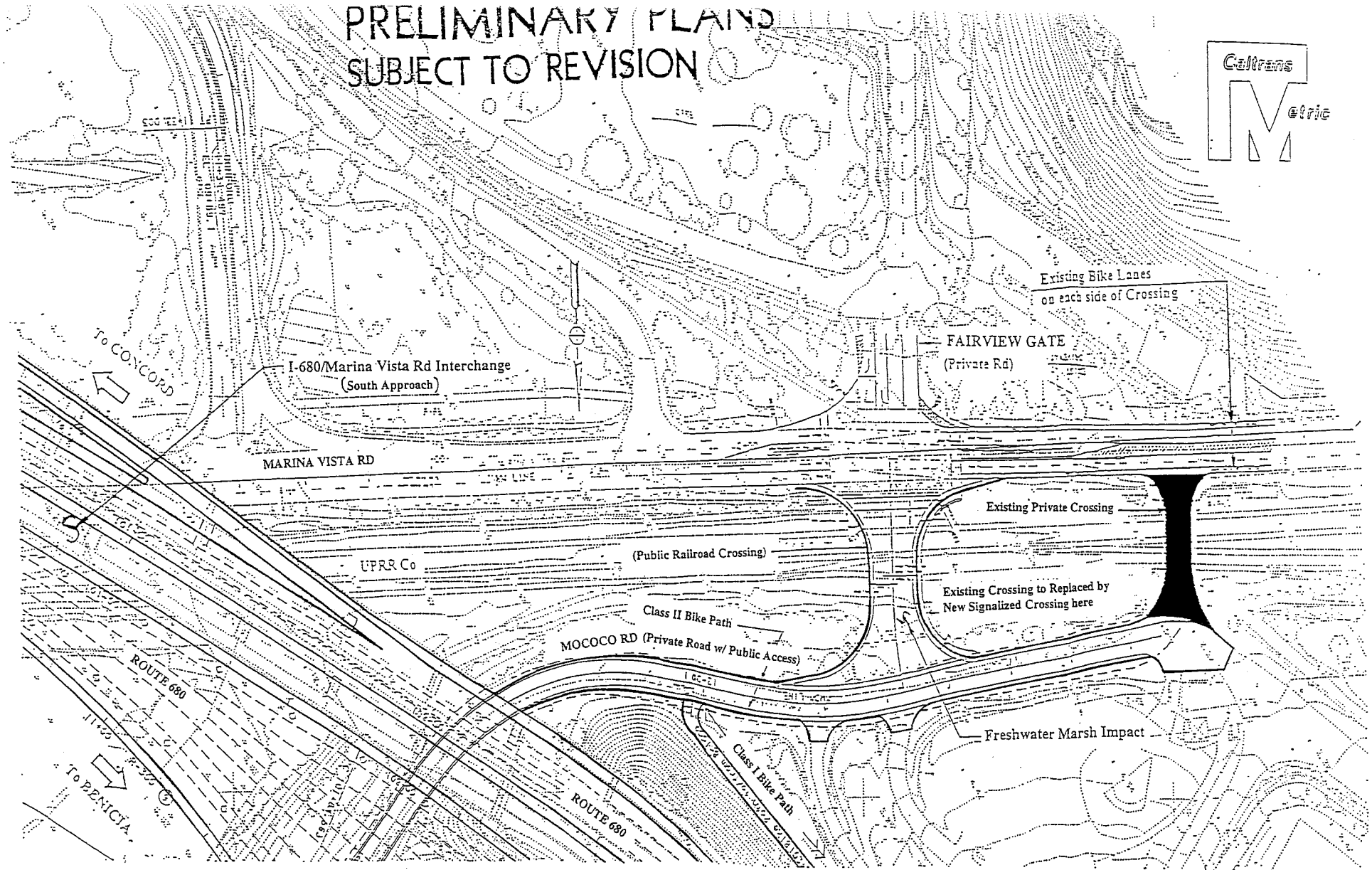


Figure 10 Railroad Public Crossing at Mococo Road
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00
No Scale

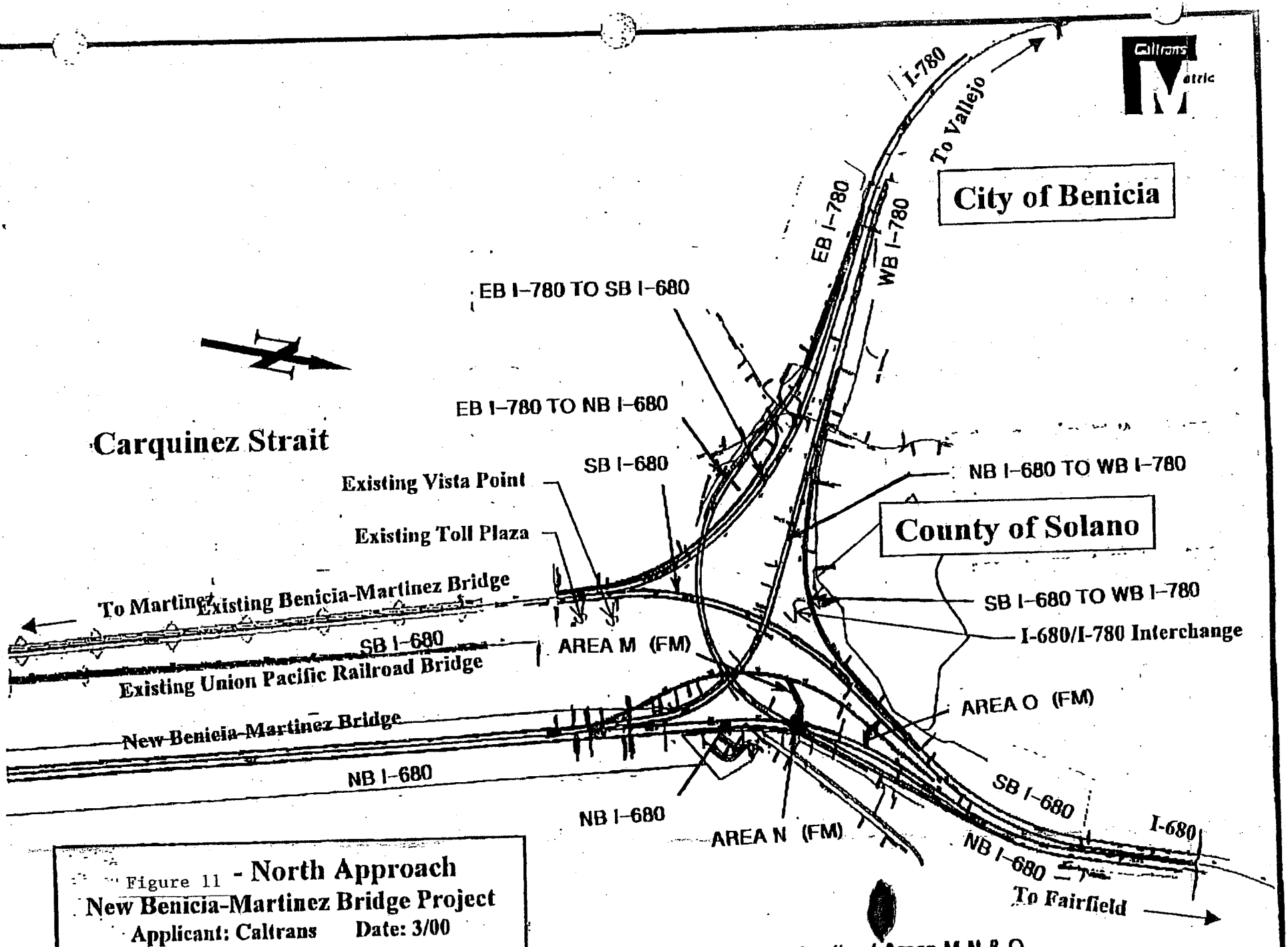


Figure 11 - North Approach
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00
No Scale

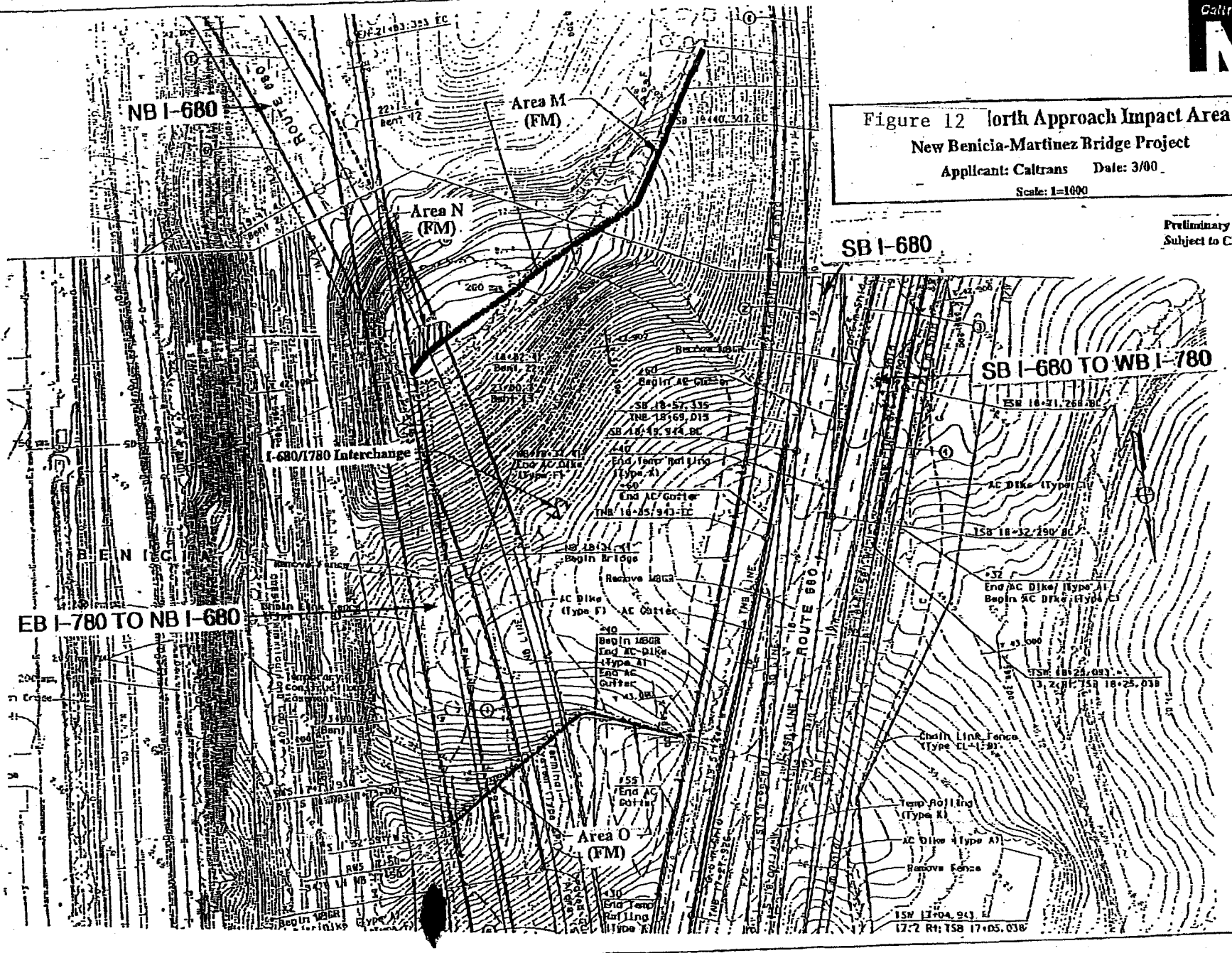


Figure 12 North Approach Impact Area

New Benicia-Martinez Bridge Project

Applicant: Caltrans **Date: 3/00**

Scale: 1=1000

Preliminary Plan
Subject to Change

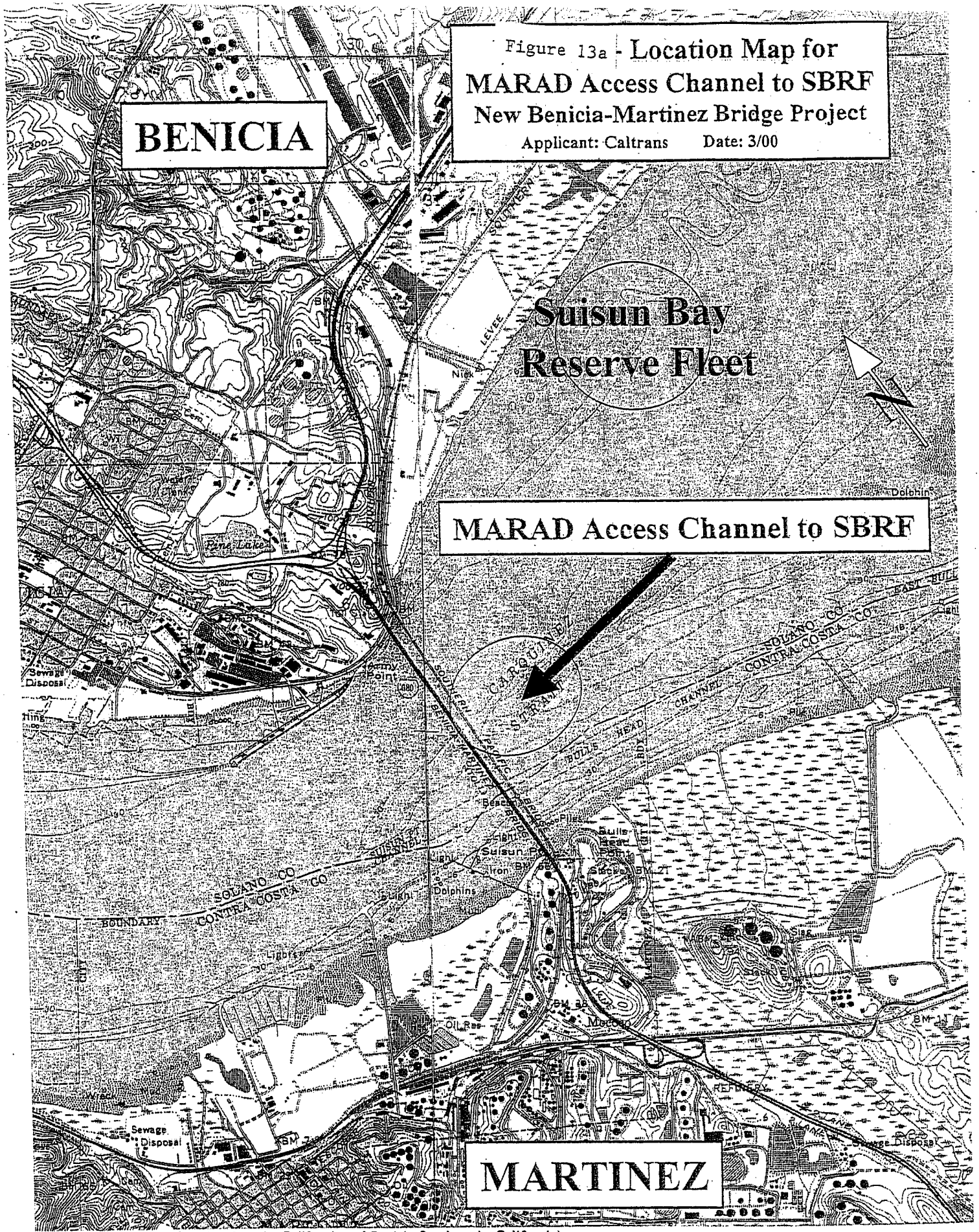


Figure 13a - Location Map for
MARAD Access Channel to SBRF
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00

SOURCE: USGS (Vine Hill Quadrangle, California and Benicia Quadrangle, California)

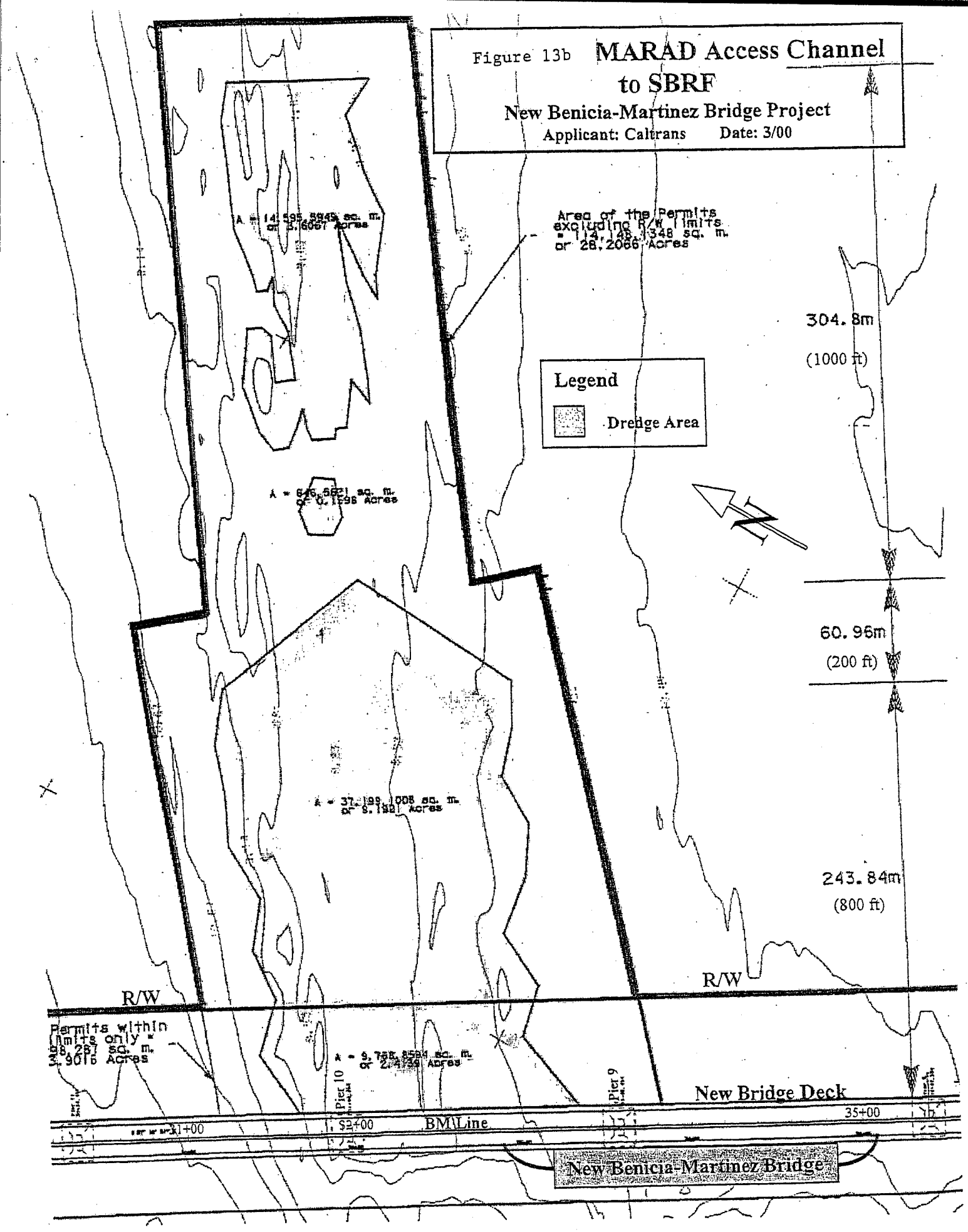
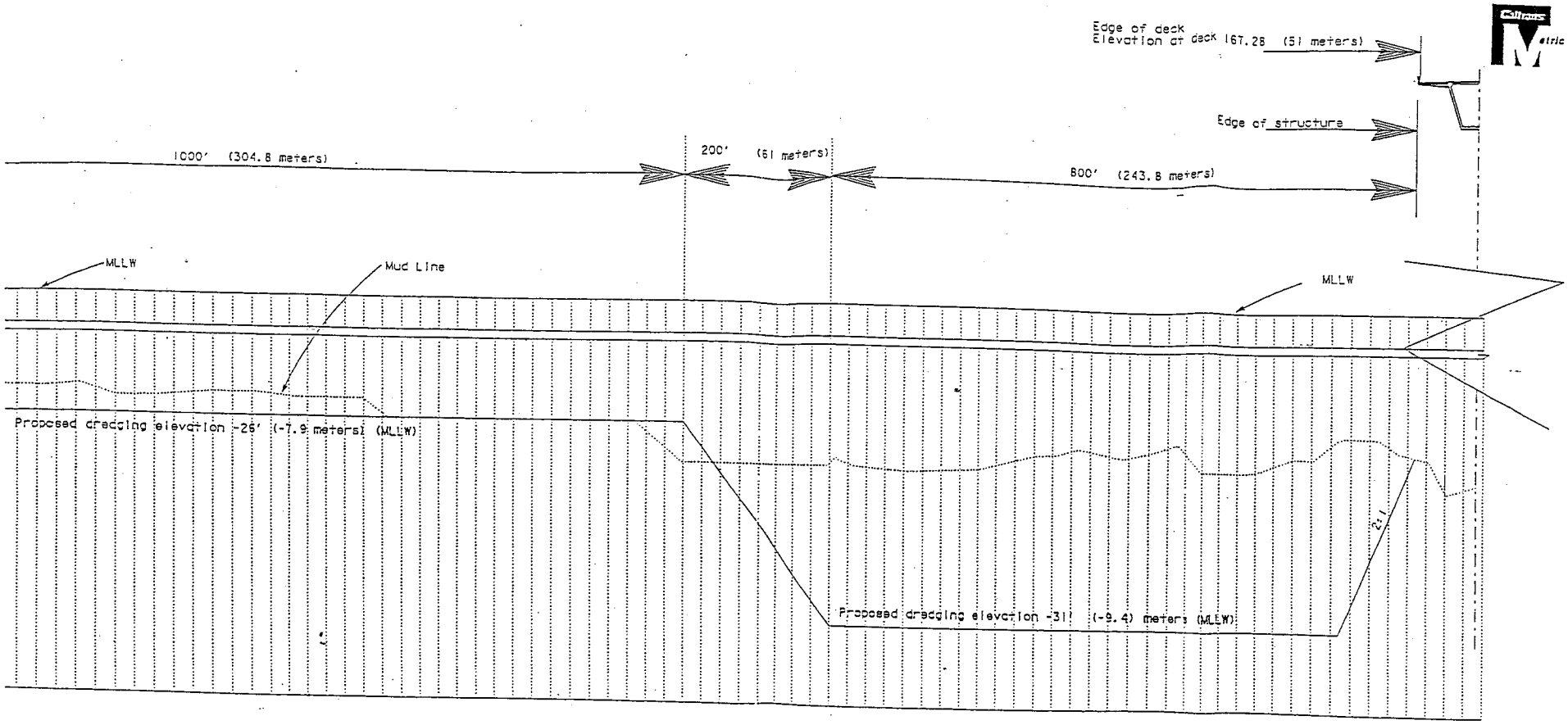


Figure 13b MARAD Access Channel to SBRF
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00
A = 14,595,8945 sq. m. or 3.6067 Acres
Area of the Permits excluding R/W limits = 114,148.1348 sq. m. or 28.2066 Acres
304.8m
(1000 ft)
Legend
Dredge Area
A = 646,6821 sq. m. or 0.1598 Acres
60.96m
(200 ft)
A = 37,199,1008 sq. m. or 9.1921 Acres
243.84m
(800 ft)
R/W
R/W
Permits within limits only = 98,287 sq. m. 24.2916 Acres
A = 9,758,8584 sq. m. or 2.4118 Acres
Pier 10
Pier 9
New Bridge Deck
31+00
32+00
BM Line
35+00
New Benicia-Martinez Bridge



SBRF CHANNEL CROSS SECTION (LOOKING SOUTH)

NO SCALE

New Benicia-Martinez Bridge Project
Station 32+00 "BM" line

Applicant: Caltrans

Figure 13c

Date: 3/00

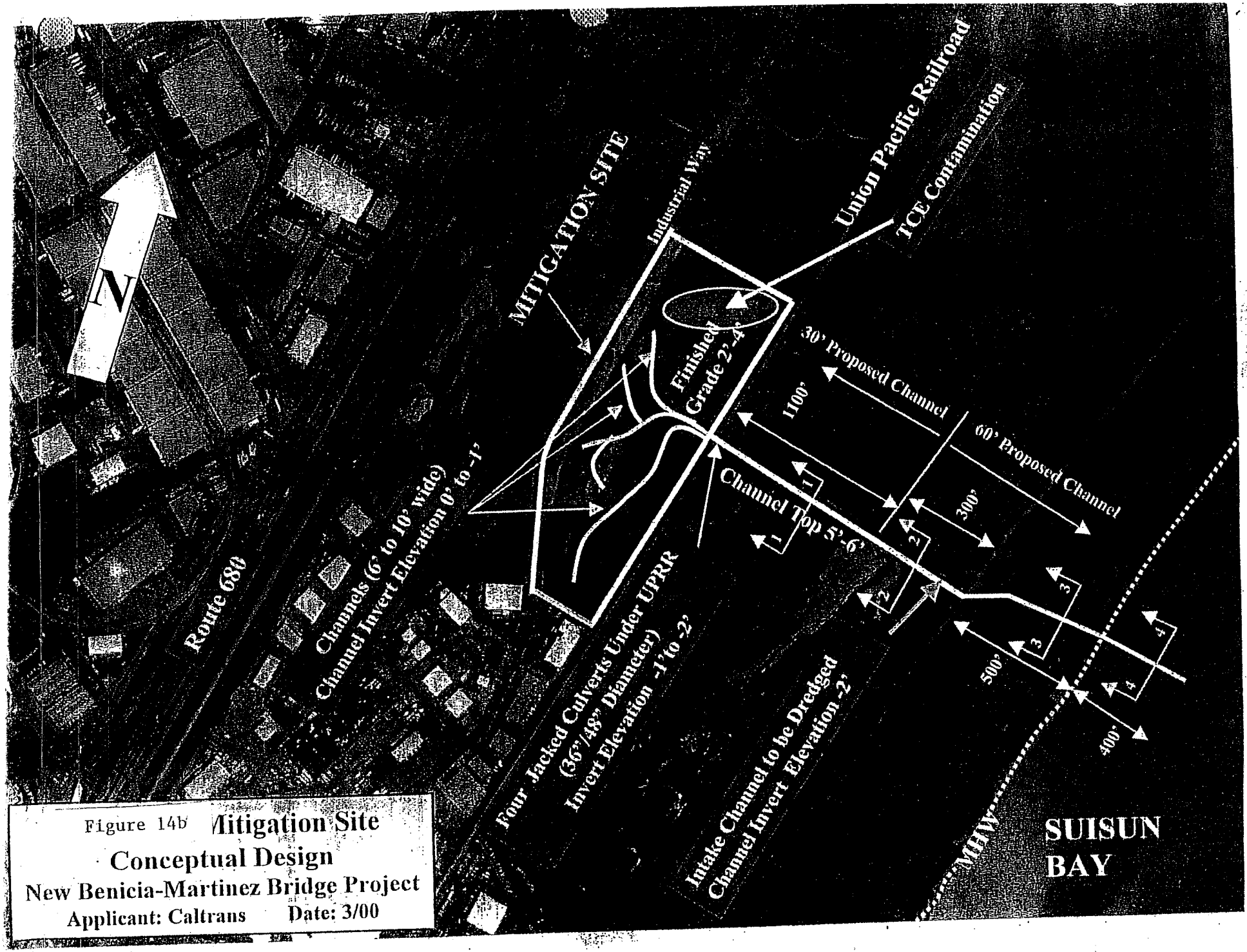


Figure 14b Mitigation Site

Conceptual Design

New Benicia-Martinez Bridge Project

Applicant: Caltrans Date: 3/00

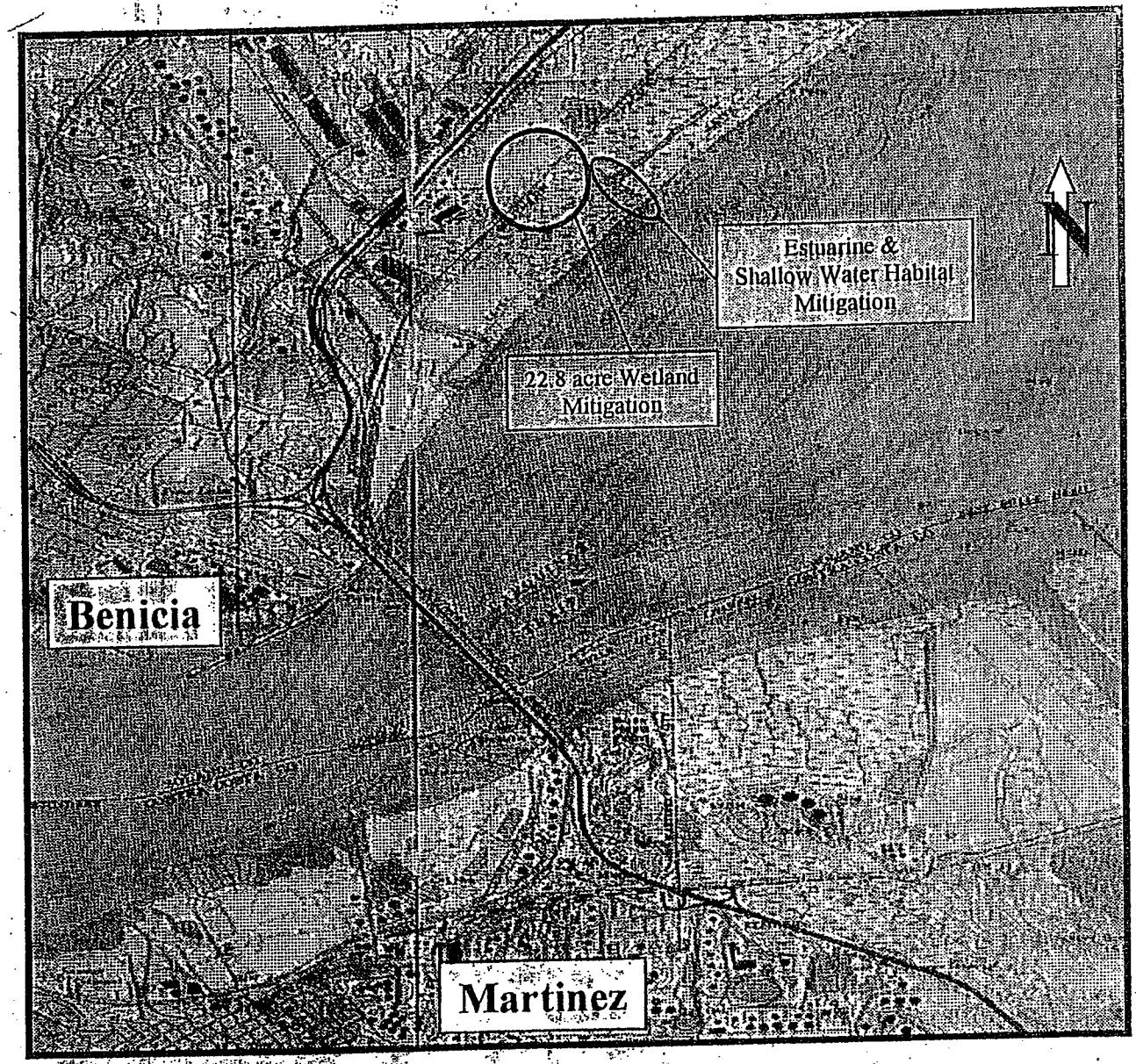
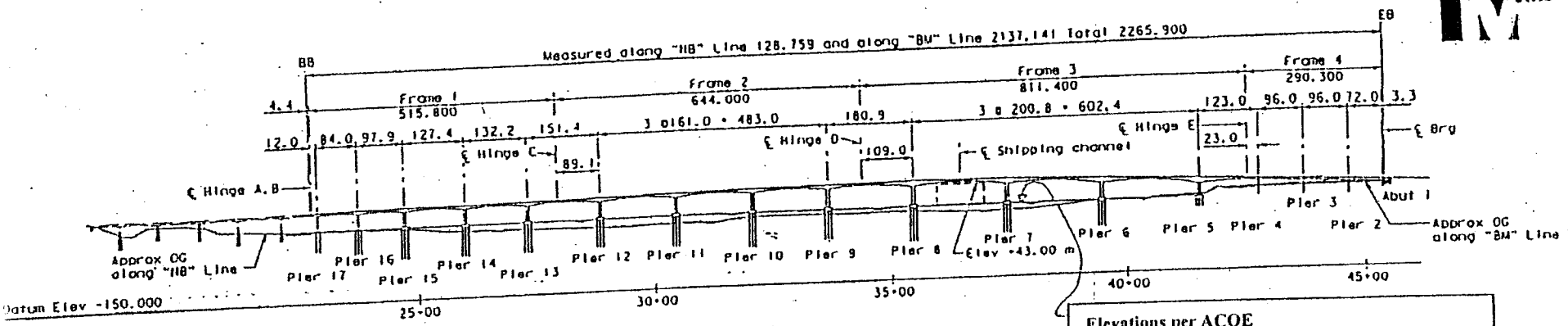
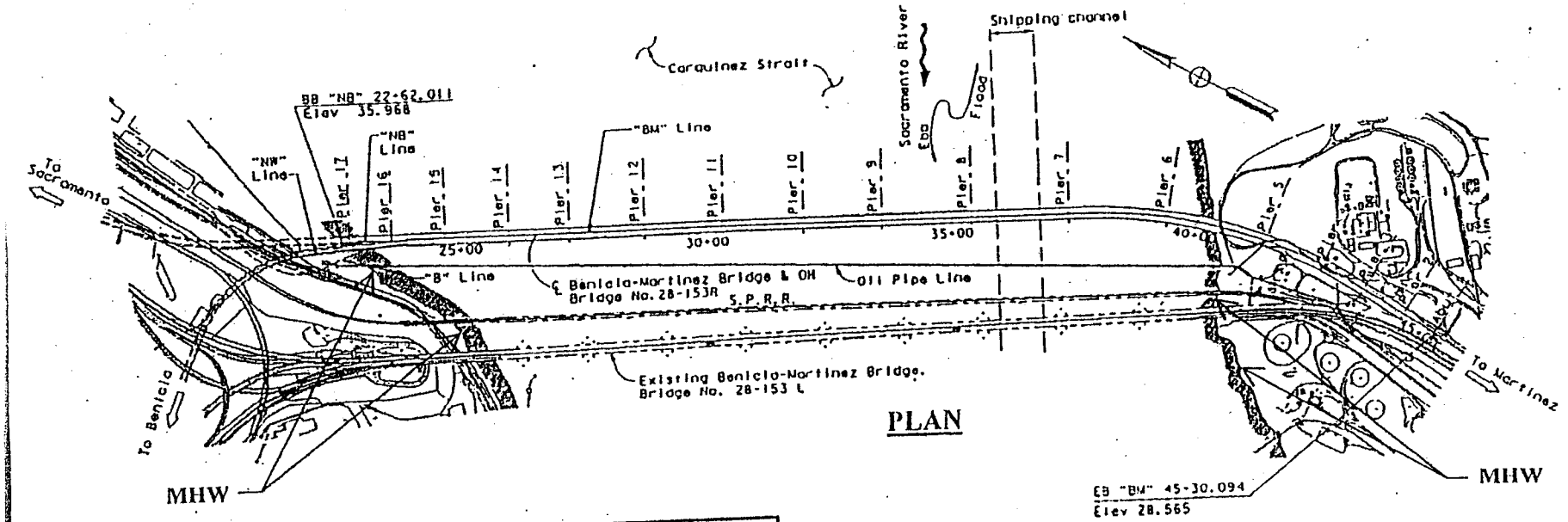


Figure 14a . **Habitat Mitigation**
New Benicia-Martinez Bridge Project
Applicant: Caltrans



DEVELOPED ELEVATION

Elevations per ACOE
High Tide Line = 1.25 m (4.10 ft)
Mean High Water = 0.88 m (2.90 ft)
Mean Sea Level Elev (1929) = 0.000
Mean Lower Low Water Elev = -0.76 m (-2.50 ft)
National Geodetic Vertical Datum (NGVD) of 1929



PLAN

Figure 15 **New Bridge General Plan**
New Benicia-Martinez Bridge Project
Applicant: Caltrans Date: 3/00
No Scale

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1823
Sacramento, California 95825-1846

IN REPLY REFER TO:

1-1-96-F-40

August 19, 1996

Fred J. Hempel
U.S. Department of Transportation
Federal Highway Administration
Region 1, California Division
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

Subject: Formal Endangered Species Consultation on the Federal Highway Administration's/California Department of Transportation's Proposed I-680 Bridge Across Carquinez Strait, Solano and Contra Costa Counties, California

Dear Mr. Hempel:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on the Service's review of the proposed Benicia-Martinez Bridge Project, Solano and Contra Costa Counties, California, and its effects on the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*), the threatened delta smelt (*Hypomesus transpacificus*) and its critical habitat, and the proposed threatened Sacramento splittail (*Pongonichthys macrolepidotus*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(Act). Your request for formal consultation dated January 18, 1996, was received by the Service on January 23, 1996.

This biological opinion is based on (1) Benicia-Martinez Bridge Project Natural Environment Study and Biological Assessment, dated December 1, 1995 (Caltrans 1995); (2) Supplemental Draft Environmental Impact Statement/Environmental Impact Report, dated March, 1995; (3) additional correspondence between Caltrans and the Service; and (4) other sources of information contained within our files. A complete administrative record of this consultation is on file in this office.

CONSULTATION HISTORY

The FHWA and Caltrans provided information sufficient to initiate formal consultation with the service on January 23, 1996. However, Caltrans later discovered site-specific hydrologic problems that required modifications be made to their mitigation plan. During a visit to Caltrans proposed mitigation site on May 15, 1996, the Service learned that Caltrans' newly configured tidal channel would result in additional impacts to the salt marsh harvest mouse. This new information provided late in the consultation process resulted in changes to this biological opinion that delayed its completion.

BIOLOGICAL OPINION

Description of the Proposed Action

Caltrans and Federal Highway Administration (FHWA) have proposed to construct a new I-680 bridge across Carquinez Strait, between the cities of Benicia in

Solano County, and Martinez in Contra Costa County (Figures 1 and 2). The purpose of the project is to alleviate present and projected congestion in the vicinity of the existing bridge. The new bridge will provide 5 lanes for northbound traffic and will be constructed east of the existing I-680 bridge and Southern Pacific Rail Road bridge. The existing bridge will be modified to accommodate 4 lanes for southbound traffic with the western-most lane becoming an exit at the Marina Vista interchange. A 12-foot wide bicycle/pedestrian lane will be provided on the western side of the west bridge and will be separated from traffic by a concrete barrier. Additionally, the new bridge will be designed and constructed to accommodate rail transit, although the provision of rail transit is not included in the proposed project.

In addition, the proposed project includes improved off-ramps and on-ramps near the Marina Vista/I-680 Interchange (south of the bridge), the Bayshore/Industrial Road/I-680 Interchange, and the East 5th Street/I-780 Interchange (north of the bridge); and includes tidal marsh restoration on a 22.8 acre site. The proposed project will have temporary and permanent wetland impacts affecting 0.08 acre of isolated freshwater marsh, 0.2 acre of delta smelt habitat, and habitat for the salt marsh harvest mouse (harvest mouse) including 2.68 acres of brackish marsh, and 2.6 acres of salt marsh.

Highway widening of I-680 south of the Marina Vista interchange, and the Waterfront Road over-crossing for the toll plaza approach, will impact 1.8 acres of salt marsh habitat and 1.18 acres of brackish marsh habitat in Peyton Marsh (Figure 1, impact areas A-F). Highway widening will also encroach on the upland buffer associated with Peyton Marsh. Highway improvements along I-680 in Benicia will fill 0.08 acre of isolated freshwater marsh.

Bridge construction activities will result in short-term shading impacts to 0.6 acre of brackish marsh along the Martinez shoreline and along the northern edge of Carquinez Strait. Underground utility relocations near the Marina Vista interchange, and the bridge and toll plaza area will temporarily impact 0.9 acre of brackish marsh and 0.2 acre of salt marsh. To minimize temporal effects, Caltrans will revegetate disturbed areas with native brackish marsh and salt marsh vegetation. Caltrans proposes additional measures to avoid and minimize impacts to wetlands, including temporary fencing of adjacent sensitive habitats during construction, and proper control and disposal of discharges and excavated materials on a site specific basis under the supervision of a qualified biologist.

The construction of two piers in waters 3-meters or less will fill 0.2 acre of delta smelt habitat. To minimize impacts to delta smelt, Caltrans will conduct all in-water work to occur in waters 3-meters or less between December 1 and March 31, and create additional habitat, as described below.

To mitigate for temporary and permanent impacts to 5.28 acres of harvest mouse habitat, 0.2 acre of delta smelt habitat, and 0.08 acre of freshwater marsh habitat, Caltrans has proposed to purchase and restore a diked and filled former tidal marsh on a 22.8 acre parcel between Sulfur Springs Creek and Lake Herman Road, and between the Southern Pacific Railroad and Industrial Way (Figure 3). To provide tidal access to the site, Caltrans will extend a channel through a California Department of Fish and Game (CDFG) tidal marsh restoration site associated with the Maritime Administration's Suisun Bay Reserve Fleet's pier project. The tidal channel will access Caltrans' site through large-diameter pipes under the Southern Pacific Railroad. The bottom of the pipes will rest at the invert of the channel. This tidal channel will impact approximately 0.6 acre of habitat on CDFG's site, and is included in the 5.28 acres of harvest mouse habitat impacted. Caltrans will restore the whole 22.8 acre mitigation site to tidal marsh with appropriate upland buffers to compensate for temporary and permanent impacts to harvest mouse habitat. Tidal channels established within the mitigation site will compensate for the

0.2 acre impact to delta smelt habitat. The final mitigation plan will include provisions for monitoring and remedial actions, if necessary, and be approved by the Service prior to initiation of the proposed project. Following completion of the project, Caltrans will deed the mitigation site to the California Department of Fish and Game.

Status of the Species

Salt Marsh Harvest Mouse

The salt marsh harvest mouse (harvest mouse) was federally listed as endangered in 1970 (35 FR 1604). A detailed account of the taxonomy, ecology, and biology of the harvest mouse is presented in the approved Recovery Plan for this species (Service 1984). Supplemental information on the harvest mouse is provided below and in the Service's August 31, 1990, biological opinion on Corps permit application no. 15283E49, which is hereby incorporated by reference.

Harvest mice may be affected by mercury in the intertidal zone. Clark *et al.* (1992) found that harvest mice were captured only at sites where concentrations of mercury or PCBs were below specific levels in house mice (*Mus musculus*). Their results (Clark *et al.* 1992) seem to suggest a southern source of mercury contamination, with mercury an order of magnitude higher in livers of house mice at Calaveras Point than at any other point measured in San Francisco Bay.

Delta smelt.

The delta smelt was federally listed as a threatened species on March 5, 1993 (58 FR 12854; Service 1993). Please refer to the Literature Cited, Service (1993, 1994a) and Department of Water Resources (Water Resources) and Bureau of Reclamation (Reclamation) (1994) for additional information on the biology and ecology of this species. The final rule to list the delta smelt as threatened describes in detail the factors that have contributed to this species' decline (Service 1993).

The delta smelt is a slender-bodied fish with a steely blue sheen on the sides, and appears almost translucent (Moyle 1976). The delta smelt, which has a lifespan of one year, has an average length of 60 to 70 mm (about 2 to 3 inches) and is endemic to Suisun Bay upstream of San Francisco Bay through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties, California. Historically, the delta smelt is thought to have occurred from Suisun Bay upstream to at least the city of Sacramento on the Sacramento River, and Mossdale on the San Joaquin River (Moyle *et al.* 1992, Sweetnam and Stevens 1993). The delta smelt is an euryhaline species (tolerant of a wide salinity range) that spawns in fresh water and has been collected from estuarine waters up to 14 parts per thousand (ppt) salinity (Moyle *et al.* 1992). For a large part of its annual life span, this species is associated with the freshwater edge of the mixing zone (saltwater-freshwater interface; also called X2), where the salinity is approximately 2 ppt (Ganssle 1966, Moyle *et al.* 1992, Sweetnam and Stevens 1993).

The delta smelt is adapted to living in the highly productive Estuary where salinity varies spatially and temporally according to tidal cycles and the amount of freshwater inflow. Despite this tremendously variable environment, the historical Estuary probably offered relatively constant suitable habitat conditions for the delta smelt because it could move upstream or downstream with the mixing zone (Moyle, pers. comm., 1993).

Shortly before spawning, adult delta smelt migrate upstream from the brackish-water habitat associated with the mixing zone to disperse widely into river channels and tidally-influenced backwater sloughs (Radtke 1966, Moyle

1976, Wang 1991). Migrating adults with nearly mature eggs were taken at the Central Valley Project's (CVP) Tracy Pumping Plant from late December 1990 to April 1991 (Wang 1991). Spawning locations appear to vary widely from year to year (Water Resources and Reclamation 1993). Sampling of larval delta smelt in the Delta suggests spawning has occurred in the Sacramento River; Barker, Lindsey, Cache, Georgiana, Prospect, Beaver, Hog, and Sycamore sloughs; in the San Joaquin River off Bradford Island, including Fisherman's Cut, False River, along the shore zone between Frank's and Webb tracts, and possibly other areas (Dale Sweetnam, Fish and Game, pers. comm. 1991; Wang 1991). Delta smelt also may spawn north of Suisun Bay in Montezuma and Suisun sloughs and their tributaries (Lesa Meng, Service, pers. comm. 1994; Sweetnam, Fish and Game, pers. comm. 1991).

Delta smelt spawn in shallow, fresh, or slightly brackish water upstream of the mixing zone (Wang 1991). Most spawning occurs in tidally-influenced backwater sloughs and channel edgewaters (Moyle 1976; Wang 1986, 1991; Moyle *et al.* 1992). Although delta smelt spawning behavior has not been observed in the wild (Moyle *et al.* 1992), the adhesive, demersal eggs are thought to attach to substrates such as cattails, tules, tree roots, and submerged branches (Moyle 1976, Wang 1991).

The spawning season varies from year to year, and may occur from late winter (December) to early summer (July). Moyle (1976) collected gravid adults from December to April, although ripe delta smelt were most common in February and March. In 1989 and 1990, Wang (1991) estimated that spawning had taken place from mid-February to late June or early July, with peak spawning occurring in late April and early May. A recent study of delta smelt eggs and larvae (Wang and Brown 1994 as cited in Water Resources and Reclamation 1994) confirmed that spawning may occur from February through June, with a peak in April and May. Spawning has been reported to occur at water temperatures of about 7° to 15° C. Results from a University of California at Davis (UCD) study (Cech and Swanson 1995) indicate that although delta smelt tolerate a wide range of temperatures (<8° C to >25° C), warmer water temperatures restrict their distribution more than colder water temperatures.

Laboratory observations indicate that delta smelt are broadcast spawners that spawn in a current, usually at night, distributing their eggs over a local area (Lindberg 1992 and Mager 1993 as cited in Water Resources and Reclamation 1994). The eggs form an adhesive foot that appears to stick to most surfaces. Eggs attach singly to the substrate, and few eggs were found on vertical plants or the sides of a culture tank (Lindberg 1993 as cited in Water Resources and Reclamation 1994).

Delta smelt eggs hatched in 9 to 14 days at water temperatures ranging from 13° to 16° C during laboratory observations in 1992 (Mager 1992 as cited in Sweetnam and Stevens 1993). In this study, larvae began feeding on phytoplankton on day four, rotifers on day six, and *Artemia nauplii* at day 14. In laboratory studies, yolk-sac fry were found to be positively phototaxic, swimming to the lightest corner of the incubator, and negatively buoyant, actively swimming to the surface. The post-yolk-sac fry were more evenly distributed throughout the water column (Lindberg 1992 as cited in Water Resources and Reclamation 1994). After hatching, larvae and juveniles move downstream toward the mixing zone where they are retained by the vertical circulation of fresh and salt waters (Stevens *et al.* 1990). The pelagic larvae and juveniles feed on zooplankton. When the mixing zone is located in Suisun Bay where there is extensive shallow water habitat within the euphotic zone (depths less than four meters), high densities of phytoplankton and zooplankton may accumulate (Arthur and Ball 1978, 1979, 1980). In general, estuaries are among the most productive ecosystems in the world (Goldman and Horne 1993).

Delta Smelt Swimming Behavior. Observations of delta smelt swimming in a swimming flume and in a large tank show that these fish are unsteady, intermittent, slow-speed swimmers (Swanson and Cech 1995). At low velocities in the swimming flume (<3 body lengths per second), and during spontaneous, unrestricted swimming in a 1 m tank, delta smelt consistently swam with a "stroke and glide" behavior. This type of swimming is very efficient; Weihs (1974) predicted energy savings of about 50 percent for "stroke and glide" swimming compared to steady swimming. However, the maximum speed delta smelt are able to achieve using this preferred mode of swimming, or gait, was less than 3 body lengths per second, and the fish did not readily or spontaneously swim at this or higher speeds (Swanson and Cech 1995). Although juvenile delta smelt appear to be stronger swimmers than adults, forced swimming at 3 body lengths per second in a swimming flume was apparently stressful; the fish were prone to swimming failure and extremely vulnerable to impingement (Swanson and Cech 1995). Unlike fish for which this type of measurement has been made in the past, delta smelt swimming performance was limited by behavioral rather than physiological or metabolic constraints (*e.g.*, metabolic scope for activity) (Brett 1976).

Delta Smelt Critical Habitat

On December 19, 1994, a final rule designating critical habitat for the delta smelt was published in the Federal Register (59 FR 65256; Service 1994a). Please refer to the Service (1994a) for additional information on delta smelt critical habitat.

In determining which areas to designate as critical habitat, the Service considers those physical and biological features that are essential to a species' conservation and that may require special management considerations or protection (50 CFR §424.12(b)).

The Service is required to list the known primary constituent elements together with the critical habitat description. Such physical and biological features include, but are not limited to, the following: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and (5) generally, habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

In designating critical habitat, the Service identified the following primary constituent elements essential to the conservation of the delta smelt: physical habitat, water, river flow, and salinity concentrations required to maintain delta smelt habitat for spawning, larval and juvenile transport, rearing, and adult migration. Critical habitat for delta smelt is contained within Contra Costa, Sacramento, San Joaquin, Solano, and Yolo counties.

Spawning Habitat. Specific areas that have been identified as important delta smelt spawning habitat include Barker, Lindsey, Cache, Prospect, Georgiana, Beaver, Hog, and Sycamore sloughs and the Sacramento River in the Delta, and the tributaries of northern Suisun Bay.

Larval and Juvenile Transport. Adequate river flow is necessary to transport larvae from upstream spawning areas to rearing habitat in Suisun Bay, and to ensure that rearing habitat is maintained in Suisun Bay. To ensure this, X2 must be located westward of the confluence of the Sacramento-San Joaquin rivers, located near Collinsville (Confluence), during the period when larvae or juveniles are being transported, according to historical salinity conditions. X2 is important because the "entrapment zone" or zone where particles, nutrients, and plankton are "trapped", leading to an area of high productivity, is associated with its location. Habitat conditions suitable

for transport of larvae and juveniles may be needed by the species as early as February 1 and as late as August 31, because the spawning season varies from year to year and may start as early as December and extend until July.

Rearing Habitat. An area extending eastward from Carquinez Straits, including Suisun, Grizzly, and Honker bays, Montezuma Slough and its tributary sloughs, up the Sacramento River to its confluence with Three Mile Slough, and south along the San Joaquin River including Big Break, defines the specific geographic area critical to the maintenance of suitable rearing habitat. Three Mile Slough represents the approximate location of the most upstream extent of historical tidal incursion. Rearing habitat is vulnerable to impacts from the beginning of February to the end of August.

Adult Migration. Adequate flows and suitable water quality are needed to attract migrating adults in the Sacramento and San Joaquin river channels and their associated tributaries, including Cache and Montezuma sloughs and their tributaries. These areas are vulnerable to physical disturbance and flow disruption during migratory periods.

The Service's 1994 and 1995 biological opinions on the CVP and State Water Project (SWP) provided for larval and juvenile transport flows, rearing habitat, and protection from entrainment for upstream migrating adults (Service 1994b, 1995).

Sacramento Splittail

On January 6, 1994, a proposed rule to list the Sacramento splittail (*Pogonichthys macrolepidotus*) as a threatened species was published in the Federal Register (59 FR 862; Service 1994c). Please refer to the Service (1994c, 1994d, 1995), and Water Resources and Reclamation (1994) for additional information on the biology and ecology of the Sacramento splittail.

The Sacramento splittail is a large cyprinid that can reach greater than 12 inches in length (Moyle 1976). Adults are characterized by an elongated body, distinct nuchal hump, and a small blunt head with barbels usually present at the corners of the slightly subterminal mouth. This species can be distinguished from other minnows in the Central Valley of California by the enlarged dorsal lobe of the caudal fin. Sacramento splittail are a dull, silvery-gold on the sides and olive-grey dorsally. During the spawning season, the pectoral, pelvic and caudal fins are tinged with an orange-red color. Males develop small white nuptial tubercles on the head.

Sacramento splittail are endemic to California's Central Valley where they were once widely distributed in lakes and rivers (Moyle 1976). Historically, Sacramento splittail were found as far north as Redding on the Sacramento River and as far south as the site of Friant Dam on the San Joaquin River (Rutter 1908). Rutter (1908) also found Sacramento splittail as far upstream as the current Oroville Dam site on the Feather River and Folsom Dam site on the American River. Anglers in Sacramento reported catches of 50 or more Sacramento splittail per day prior to damming of these rivers (Caywood 1974). Sacramento splittail were common in San Pablo Bay and Carquinez Strait following high winter flows up until about 1985 (Messersmith 1966, Moyle 1976, and Wang 1986 as cited in Water Resources and Reclamation 1994).

In recent times, dams and diversions have increasingly prevented upstream access to large rivers and the species is restricted to a small portion of its former range (Moyle and Yoshiyama 1992). Sacramento splittail enter the lower reaches of the Feather (Jones and Stokes 1993) and American rivers (Charles Hanson, State Water Contractors, *in litt.*, 1993) on occasion, but the species is now largely confined to the Delta, Suisun Bay, and Suisun Marsh (Service 1994c). Stream surveys in the San Joaquin Valley reported observations of Sacramento splittail in the San Joaquin River below the mouth of the Merced

River and upstream of the confluence of the Tuolumne River (Saiki 1984 as cited in Water Resources and Reclamation 1994).

Sacramento splittail are long-lived, frequently reaching five to seven years of age. Generally, females are highly fecund, producing over 100,000 eggs each year (Daniels and Moyle 1983). Populations fluctuate annually depending on spawning success. Spawning success is highly correlated with freshwater outflow and the availability of shallow-water habitat with submersed, aquatic vegetation (Daniels and Moyle 1983). Sacramento splittail usually reach sexual maturity by the end of their second year at which time they have attained a body length of 180 to 200 mm. There is some variability in the reproductive period because older fish reproduce before younger individuals (Caywood 1974). The largest recorded individuals of the Sacramento splittail have measured between 380 and 400 mm (Caywood 1974, Daniels and Moyle 1983). Adults migrate into fresh water in late fall and early winter prior to spawning. The onset of spawning is associated with rising water temperature, lengthening photoperiod, seasonal runoff, and possibly endogenous factors from the months of March through May, although there are records of spawning from late January to early July (Wang 1986). Spawning occurs in water temperatures from 9° to 20° C over flooded vegetation in tidal freshwater and euryhaline habitats of estuarine marshes and sloughs, and slow-moving reaches of large rivers. The eggs are adhesive or become adhesive soon after contacting water (Caywood 1974, and Bailey, UCD, pers. comm., 1994, as cited in Water Resources and Reclamation 1994). Larvae remain in shallow, weedy areas close to spawning sites and move into deeper water as they mature (Wang 1986).

Sacramento splittail are benthic foragers that feed on opossum shrimp, although detrital material makes up a large percentage of their stomach contents (Daniels and Moyle 1983). Earthworms, clams, insect larvae, and other invertebrates are also found in the diet. Predators include striped bass and other piscivores. Sacramento splittail are sometimes used as bait for striped bass.

Sacramento splittail can tolerate salinities as high as 10 to 18 ppt (Moyle 1976, Moyle and Yoshiyama 1992). Sacramento splittail are found throughout the Delta (Turner 1966), Suisun Bay, and the Suisun and Napa marshes. They migrate upstream from brackish areas to spawn in freshwater. Because they require flooded vegetation for spawning and rearing, Sacramento splittail are frequently found in areas subject to flooding.

The 1985 to 1992 decline in Sacramento splittail abundance is concurrent with hydrologic changes to the Estuary. These changes include increases in water diversions during the spawning period from January through July. Diversions, dams and reduced outflow, coupled with severe drought years, introduced aquatic species, and loss of wetlands and shallow-water habitat (Fish and Game 1992) have reduced the species' capacity to reverse its decline.

Environmental Baseline

Salt Marsh Harvest Mouse

The harvest mouse has been documented in the Shell, Peyton, and Martinez Shoreline marshes along I-680 in Contra Costa County, but suitable marsh and adjacent grassland habitat does not exist for the salt marsh harvest mouse in the narrow area of Suisun Marsh in the study area along the Benicia shoreline (Caltrans 1995). Caltrans conducted small mammal surveys along Sulphur Springs Creek (600 trap-nights) and in Shell Marsh (1,200 trap-nights) resulting in the capture of one salt marsh harvest mouse in Shell Marsh. In addition, studies by Shellhammer have resulted in the capture of 6 harvest mice in 1988 (2,270 trap-nights) and one harvest mouse in 1990 (800 trap-nights).

Although salt marsh harvest mice typically prefer wetland habitat dominated by pickleweed (Shellhammer et al. 1982), adjacent upland habitat up to about 150 feet from wetlands also is used, but to a lesser degree (Fisler 1965; Johnson and Shellhammer 1988). How salt marsh harvest mice use upland habitat is not fully understood. In areas where upland habitat lies adjacent to tidal wetlands or seasonal wetlands that undergo inundation, upland habitat provides refugial habitat critical to the species' survival. Where flooding of habitat does not occur, the importance of upland habitats is unclear. Uplands provide a dietary source of green grasses (Fisler 1965), provide movement corridors between isolated marsh segments, and provide a buffer habitat when salt marsh harvest mice are displaced from preferred habitat by high populations of competitive species, such as California voles (Johnson and Shellhammer 1988).

Delta Smelt

Adult delta smelt spawn in central Delta sloughs from February through August in shallow water areas having submersed aquatic plants and other suitable substrates and refugia. These shallow water areas have been identified in the draft Delta Native Fishes Recovery Plan (Service 1994d) as essential to the long-term survival and recovery of delta smelt and other resident fish. A no net loss strategy for these areas is proposed in this Recovery Plan.

The delta smelt is adapted to living in the highly productive Estuary where salinity varies spatially and temporally according to tidal cycles and the amount of freshwater inflow. Despite this tremendously variable environment, the historical Estuary probably offered relatively consistent spring transport flows that moved delta smelt juveniles and larvae downstream to the mixing zone (Peter Moyle, UCD, pers. comm.). Since the 1850's, however, the amount and extent of suitable habitat for the delta smelt has declined dramatically. The advent in 1853 of hydraulic mining in the Sacramento and San Joaquin rivers led to increased siltation and alteration of the circulation patterns of the Estuary (Nichols *et al.* 1986, Monroe and Kelly 1992). The reclamation of Merritt Island for agricultural purposes, in the same year, marked the beginning of the present-day cumulative loss of 94 percent of the Estuary's tidal marshes (Nichols *et al.* 1986, Monroe and Kelly 1992).

In addition to the degradation and loss of estuarine habitat, the delta smelt has been increasingly subject to entrainment, upstream or reverse flows of waters in the Delta and San Joaquin River, and constriction of low salinity habitat to deep-water river channels of the interior Delta (Moyle *et al.* 1992). These adverse conditions are primarily a result of drought and the steadily increasing proportion of river flow being diverted from the Delta by the CVP and SWP (Monroe and Kelly 1992). The relationship between the portion of the delta smelt population west of the Delta as sampled in the summer townet survey and the natural logarithm of Delta outflow from 1959 to 1988 (Water Resources and Reclamation 1994) indicates that the summer townet index increased dramatically when outflow was between 34,000 and 48,000 cfs, placing X2 between Chipps and Roe islands. Placement of X2 at Chipps and Roe islands would duplicate these favorable conditions.

Delta Smelt Critical Habitat.

Critical habitat has been affected by dredging, pile driving, and other actions that destroy spawning and refugial areas. Critical habitat has also been affected by diversions that have shifted the position of X2 upstream. This shift has caused a decreased abundance of delta smelt. Existing baseline conditions and implementation of the Service's 1993 and 1994 biological opinions provide a substantial part of the necessary positive riverine flows and estuarine outflows to transport delta smelt larvae downstream to suitable rearing habitat in Suisun Bay outside the influence of marinas and Federal and State pumping plants.

Sacramento Splittail.

Sacramento splittail have experienced a decline in population as a result of hydrologic changes in the Estuary and loss of shallow water habitat due to dredging and filling. additional changes include increases in water diversions during the spawning period of January through July. Most of the factors that caused delta smelt to decline have also caused the decline of Sacramento splittail. These factors include (1) diversions, (2) dams and (3) reduced outflow, coupled with (4) severe drought years, (5) introduced aquatic species such as the Asiatic clam (Nichols *et al.* 1990), and (6) loss of wetlands and shallow-water habitat (DFG 1992) and appear to have perpetuated the species' decline.

Effects of the Action

Salt Marsh Harvest Mouse

The proposed project will have temporary and permanent impacts to 5.28 acres of harvest mouse habitat. Highway widening will also encroach upon Shell and Peyton marsh's upland buffer. An unknown number of salt marsh harvest mice associated with the habitat to be filled may be killed. To minimize impacts to the harvest mouse and other wetland fill, Caltrans will restore their 22.8-acre mitigation site to tidal marsh with appropriate upland buffers. To provide tidal influence, Caltrans will extend a channel through the Suisun Fleet Reserve's 60 acre restoration site impacting an approximate 0.6 acre of habitat. This acreage is included in the 5.28 acre estimate. The final configuration of the mitigation site will be approved by the Service prior to initiation of any construction affecting listed species. The mitigation site lies adjacent and west of the California Department of Fish and Game's Goodyear Slough unit of the Suisun Marsh, and north of the Suisun Reserve Fleet's mitigation site, where the salt marsh harvest mouse is know to occur. When the appropriate habitat is established, the harvest mouse is expected to immigrate to, and populate the proposed mitigation site.

Delta Smelt

The proposed construction of the two piers in shallow water habitat will impact 0.2 acre of delta smelt habitat. To minimize the impacts to the 0.2 acre of delta smelt habitat, Caltrans will create 0.6 acres of shallow water habitat at the same 22.8 acre site mention above. Further, with the addition of the channel being cut through the Suisun Fleet Reserve's 60 acre restoration site to provide tidal action, additional habitat for delta smelt will be provided. Caltrans has agreed to conduct in-water work in these shallow areas during the months of December 1 through March 31. During this time period, adult delta smelt move up-stream to fresh waters in dead-end sloughs to spawn. Because the fish will be out of the area, the direct effects of construction to individual delta smelt will likely be avoided.

Sacramento Splittail

The proposed project effects mentioned above for delta smelt are similar to those likely at affect the Sacramento splittail.

Cumulative Effects

Cumulative effects are those impacts of future State, local, Tribal, or private actions affecting endangered and threatened species that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed project will be subject to the consultation requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed project.

Mr. Fred J. Hempel

Salt Marsh Harvest Mouse

One of the most serious cumulative effects on the salt marsh harvest mouse is the continued degradation of diked wetlands, typically by the elimination of wetland vegetation by grazing, discing, grubbing, and plowing, and/or the elimination of appropriate hydrologic conditions by installing drains, ditches, and pumps. The extensive and ongoing conversion of salt marshes to brackish and freshwater habitat also has appreciably reduced available tidal habitat for this species. Continued approval of urban developments without maintaining adequate upland habitat adjacent to wetlands also represents a major cumulative effect by likely increasing mortality rates and lowering harvest mouse carrying capacities in affected areas. The proposed project is expected to contribute to future urban development in both Contra Costa and Solano Counties.

Delta Smelt

Cumulative effects on the delta smelt or its critical habitat include any continuing or future non-Federal diversions of water that may entrain adult or larval fish or that may decrease outflows incrementally, thus shifting upstream the position of the delta smelt's preferred habitat. Water diversions through intakes serving numerous small, private agricultural lands and duck clubs in the Delta, upstream of the Delta, and in Suisun Bay contribute to these cumulative effects. These diversions also include municipal and industrial uses, as well as providing water for power plants. State or local levee maintenance and channel dredging activities also destroy or adversely modify critical habitat by disturbing spawning or rearing habitat.

Water is diverted from the Delta by approximately 1,800 local agricultural users. Water is also diverted by cities such as Antioch and Concord to supply domestic needs. The total water diverted from the Delta supplies two-thirds of California's population, and allows irrigation of several million acres of farmland (DWR and Reclamation 1994). Of the entities with water storage greater than 100,000 acre-feet (AF), the percent of total storage is the following: (1) Reclamation stores 40.6 percent of Delta water, 42.8 percent of Sacramento River water, and 37.7 percent of San Joaquin River water; (2) DWR stores 17.4 percent of Delta water, 29.0 percent of Sacramento River water, and has no storage for San Joaquin River water; and (3) non-Federal entities (excluding DWR) store 42.0 percent of Delta water, 28.2 percent of Sacramento River water, and 62.3 percent of San Joaquin River water.

Effects on hydrodynamic conditions are inextricably tied to past and present hydraulic modifications that have been made in the Delta for various beneficial purposes, such as levee construction for land reclamation and flood control; channel dredging for navigation and levee maintenance; channel enlargement and deepening for navigation; operation of diversion pumps, siphons, and drainage pumps; and construction of non-Federal export pumping plants and associated facilities for water management. Upstream conditions for fish will continue to deteriorate. Increased demands may further reduce reservoir storage and will adversely affect riverine conditions. Without criteria to reduce Delta habitat degradation (including entrainment losses), ongoing factors and future projects will reduce the survival and abundance of all fish species. Under future conditions, surplus flows are likely to be less available than under existing conditions. Reduced availability will result from: (1) operations that reduce the frequency of spill from upstream reservoirs; (2) build out by senior water right holders; and (3) changes in the criteria that define surplus flows. Because surplus flows combined with required flows in the State Water Quality Control Plan are critical for transporting fish larvae to rearing habitat and maintaining that rearing habitat in a suitable location in Suisun Bay, new diverters of surplus water will reduce the likelihood that fishery declines will be reversed. Possible

adverse hydrodynamic effects on south Delta channels under cumulative future conditions are uncertain but are likely to be significant.

Additional cumulative effects result from the impacts of point and non-point source chemical contaminant discharges. These contaminants include selenium and numerous pesticides and herbicides associated with discharges related to agricultural and urban activities. Implicated as potential sources of mortality for delta smelt and Sacramento splittail, these contaminants may adversely affect delta smelt and Sacramento splittail reproductive success and survival rates. Spawning habitat may also be affected if submersed aquatic plants used as substrates for adhesive egg attachment are lost due to toxic substances.

Sacramento Splittail

The cumulative effects mentioned above for the delta smelt are similar to those likely to affect the Sacramento splittail.

Conclusion

After reviewing the current status of the salt marsh harvest mouse, the environmental baseline for the project area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the salt marsh harvest mouse.

After reviewing the current status of the delta smelt, the environmental baseline for the project area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the delta smelt and is not likely to destroy or adversely modify designated critical habitat.

After reviewing the current status of the Sacramento splittail, the environmental baseline for the project area, the effects of the proposed action, and the cumulative effects, it is the Service's conference opinion that the action, as proposed, is not likely to jeopardize the continued existence of the proposed Sacramento splittail.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species and the ecosystems upon which they depend. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service recommends the following additional actions to promote the recovery of federally listed species and their habitats within the Delta:

1. The Service recommends that the FHWA and Caltrans develop procedures that minimize impacts to tidal marsh and harvest mice by constructing roadside curbs that direct highway runoff away from wetland habitats and into sewer infrastructure when possible.

2. The Service recommends that FHWA and Caltrans continue to design mitigation that promotes conservation of listed species.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act prohibits take (i.e. to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harass is defined as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns such as breeding, feeding, or sheltering. Incidental take is any take of listed animal species which results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the FHWA so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If the FHWA (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

Salt Marsh Harvest Mouse

For the salt marsh harvest mouse, the Service anticipates that an unquantifiable number of mice would be killed or injured by the proposed action. Harvest mice lack the agility to evade heavy equipment that will be used in the proposed action. Harvest mice may be killed during fill associated with highway widening, and be exposed to higher mortality rates as a result of encroachment upon the refugial upland cover adjacent to Peyton Marsh and Shell Marsh. The level of take is unquantifiable because of the variable, unknown size of the resident population over time, and the difficulty in finding killed or injured small mammals. In such situations, the Service estimates the level of take in terms of acreage of habitat loss. The proposed action would result in the loss of 5.28 acres of habitat available to the harvest mouse. The proposed mitigation, however, will compensate for this loss. The harvest mouse is expected to immigrate to and populate the mitigation site where appropriate habitat becomes established.

Delta Smelt/Sacramento Splittail

The Service anticipates that incidental take of delta smelt and Sacramento splittail will be difficult to detect for the following reasons: The small size of delta smelt and Sacramento splittail eggs and larvae and the unlikelihood of finding dead or impaired specimens. However, the Service anticipates take of these species to occur by the loss of 0.2 acre of refugia and rearing habitat associated with the proposed pier construction. The

proposed project will result in the loss of 0.2 acre of designated delta smelt critical habitat. The proposed mitigation, however, will compensate for this loss.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the salt marsh harvest mouse, delta smelt, or Sacramento splittail, or result in the destruction or adverse modification of designated delta smelt critical habitat. Critical habitat for the salt marsh harvest mouse and Sacramento splittail has not been designated, therefore none will be affected.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take:

1. Salt Marsh Harvest Mouse

The potential for harassment, harm (including habitat modification), or habitat loss for salt marsh harvest mice shall be minimized and/or compensated.

2. Delta Smelt

The potential for harassment, harm (including habitat modification), or habitat loss for delta smelt and Sacramento splittail shall be minimized and/or compensated.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the Act, the following term and condition, which implements the reasonable and prudent measures described above, must be complied with and included as a special condition in any permit granted by the Federal Highway Administration for this project. This term and condition is non-discretionary:

The Federal Highway Administration shall ensure that the project is implemented as described.

Reporting Requirements

The Federal Highway Administration shall require personnel to report immediately any information about take or suspected take of salt marsh harvest mouse, delta smelt, and/or Sacramento splittail. Applicant shall immediately notify the Service within one working day of any such information. Notification must include date, time, and precise location of the incident/specimen and any other pertinent information. The Service contact is the Endangered Species Division at (916) 979-2752. Any killed specimens that have been taken shall be properly preserved in accordance with Natural History Museum of Los Angeles County policy of accessioning (10% formalin in a quart jar of freezing). Information concerning how the specimen was taken, length of the interval between death and preservation, and any other relevant information shall be written on 100% rag content paper with permanent ink and included in the container with the specimen. Preserved specimens shall be delivered to the Service's Division of Law Enforcement at 3310 El Camino Avenue, Suite 140, Sacramento, California 95821 (916) 979-2986.

A post-operation compliance report prepared by the monitoring biologists shall be forwarded to the Sacramento Field Office within 60 calendar days of the completion of the project. This report shall detail (i) dates the operation

occurred; (ii) pertinent information concerning the applicant's success in meeting project mitigation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on federally listed species, if any; (v) occurrences of incidental take of federally listed species, if any; and (vi) other pertinent information.

The Sacramento Field Office is to be notified within twenty-four hours of the finding of any dead listed species or any unanticipated harm to the species' habitat addressed in this biological opinion and, within three working days, follow up such verbal notification in writing. The Service contact person for this is the Assistant Field Supervisor at (916) 979-2725.

Review Requirements

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the effects of incidental take that might otherwise result from the proposed action. With implementation of these measures the Service believes that no more than the unquantifiable number of salt marsh harvest mice associated with 2 acres of pickleweed habitat proposed to be modified will be taken. If, during the course of the action, this minimized level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided. The Federal Highway Administration must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation and conference on the proposed I-680 bridge across the Carquinez Strait. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and: if: (1) the amount or extent of incidental take is exceeded; (2) new information reveal effects of the proposed action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3)the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (4) a new species or critical habitat is designated that may be affected by the proposed action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If the amount or extent of proposed activity as described in the "Description of the Proposed Action" is exceeded, then incidental take of the salt marsh harvest mouse and delta smelt will be assumed to have been exceeded. The causative action shall cease and consultation shall be reinitiated immediately.

The incidental take statement provided with this conference opinion does not become effective for the Sacramento splittail until the species is listed and the conference opinion is adopted as the biological opinion issued through formal consultation. At that time, the project will be reviewed to determine whether any take of the Sacramento splittail has occurred. Modifications of the opinion and the incidental take statement may be appropriate to reflect that take. No take of the Sacramento splittail may occur between the listing of the Sacramento splittail and the adoption of the conference opinion through formal consultation, or the completion of a subsequent formal consultation.

You may ask the Service to adopt the conference opinion incorporated in this consultation as a biological opinion issued through formal consultation, if the Sacramento splittail is listed. The request must be in writing. If the

Service reviews the proposed action and finds that their have been no significant changes in the action as planned, or in the information used during the conference, the Service will adopt the conference opinion as the biological opinion on the project.

Should the Sacramento splittail become listed and after any subsequent adoption of this conference opinion, the FHWA shall request reinitiation of consultation if: (1) the amount or extent of incidental take is exceeded; (2) new information reveal effects of the proposed action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3)the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (4) a new species or critical habitat is designated that may be affected by the proposed action.

If you have any questions regarding this opinion, please contact Dan Buford (salt marsh harvest mouse) or Matthew Vandenberg (delta smelt or Sacramento splittail) at (916) 979-2752.

Sincerely,

Joel A. Medlin
Field Supervisor

cc: ARD-ES, Portland, OR
FWS, Wetlands Branch, Sacramento, CA
CDFG, Region III, Yountville, CA
CDFG, Environmental Services, Sacramento, CA
Chuck Morton, Caltrans-District 4, Oakland, CA

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-01-I-181

November 9, 2000

Mr. Michael G. Ritchie
U.S. Department of Transportation
Federal Highway Administration
California Division
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

Subject: Adoption of Sacramento Splittail Conference Opinion and Request for Concurrence with a Not Likely to Adversely Affect Determination to the Biological Opinion for the Formal Consultation and Conference on the Proposed Benicia-Martinez Bridge Across Carquinez Strait, Solano and Contra Costa Counties, California (1-1-96-F-40)

Dear Mr. Ritchie:

The U.S. Fish and Wildlife Service (Service) received your request, dated September 29, 2000, to adopt the conference opinion on the Benicia-Martinez bridge project (Service file #: 1-1-96-F-40) for the Sacramento splittail (*Pogonichthys macrolepidotus*) (splittail) as a biological opinion. Additionally, your letter requested concurrence that additional work including open water dredging, is not likely to adversely affect splittail, delta smelt (*Hypomesus transpacificus*), or delta smelt critical habitat.

A telephone conversation of October 17, 2000, between Scott Cotter of my staff and Chuck Morton of California Department of Transportation (Caltrans), confirmed that the only new facet of the project will be the dredging of a deepwater navigational channel for the Maritime Administration Suisun Bay Reserve Fleet upstream of the new bridge location. Other activities described in your letter as "additional work not identified in the Biological Assessment" including installation of large diameter piles and cofferdams, were previously addressed in the Service's Biological Opinion on the project (Service file #: 1-1-96-F-40). As stated in your letter, no changes in circumstances or in the proposed project are anticipated that would alter the conclusions regarding the splittail.

The dredging will occur in deep water and is outside the boundaries of designated critical habitat for the delta smelt, thus, the Service has determined that the amount and extent of take will not

exceed that which was analyzed in the original biological opinion. Therefore, we concur with your determination that the additional work may affect, but is not likely to adversely affect the federally listed delta smelt and splittail in accordance with the requirements of the Endangered Species Act of 1973, as amended (Act). If all of the provisions described in the Corps' Public Notice 213921N are followed, no further action pursuant to the Act is necessary. In addition, and for the reasons stated above we adopt your conference opinion as a biological opinion.

However, if new information reveals effects of the project that may affect federally listed species or critical habitat in a manner not identified to date, or if a new species is listed or critical habitat is designated that may be affected by the proposed action, this office should be contacted immediately for further guidance.

Please contact Scott Cotter or Ken Sanchez of my staff at (916) 414-6625, if you have questions regarding this response.

Sincerely,

Karen J. Miller

Karen J. Miller
Chief, Endangered Species Division

cc: U.S. Army Corps, San Francisco, CA

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

MAY 28 1996 F/SW031:PR

Mr. Fred J. Hempel
Division Administrator
Federal Highway Administration
Region Nine, California Division
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

Dear Mr. Hempel:

Thank you for requesting consultation pursuant to section 7 of the Endangered Species Act regarding the effects of the proposed construction of a new bridge adjacent to the existing Benicia-Martinez Bridge on the endangered winter-run chinook salmon and its critical habitat. The new bridge, connecting the cities of Benicia (Solano County) and Martinez (Contra Costa County) across the Carquinez Strait, would supplement the existing bridge. My staff has reviewed the Benicia-Martinez Bridge Project Natural Environment Study/Biological Assessment (BA) dated December 1, 1995, which was provided with your consultation request.

The proposed project occurs within the designated critical habitat of the Sacramento River winter-run chinook salmon. Adult winter-run chinook salmon may be present in the project area from mid-November through early May. Juvenile winter-run chinook salmon are known to rear in shallow water areas of the Delta, Suisun Bay, Carquinez Strait, and San Pablo Bay from December through April.

According to information provided directly to my staff by Mr. Chuck Morton of CalTrans, all in-water work will be completed behind cofferdams or caissons. This construction technique will isolate the work site from the estuary and minimize possible impacts to migrating salmon. An estimated 0.2 acres of shallow water aquatic habitat may be lost due to construction of the new bridge. Mitigation set out in the BA to replace this habitat at a 3:1 ratio for the protection of delta smelt habitat will mitigate the loss of this potential winter-run chinook salmon rearing habitat.

Based on the National Marine Fisheries Service's (NMFS) review of the BA and all other available information, I have determined that the proposed project is not likely to adversely affect the winter-run chinook salmon or its critical habitat, and that

consultation may be concluded. However, if the proposed methods of in-water construction are changed or new information becomes available indicating that the winter-run chinook salmon or its critical habitat may be adversely affected, further consultation with NMFS will be necessary.

If you have questions concerning these comments, please contact Ms. Penny Ruvelas at (707) 575-6062.

Sincerely,

Hilda Diaz-Soltero
Regional Director

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

November 15, 2000

In Response Refer To:
SWR-00-SA-0222:MCV

Mr. Michael G. Richie
California Division Administrator
U.S. Department of Transportation
Federal Highway Administration
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

Dear Mr. Richie:

This is in response to your letter of September 29, 2000, requesting reinitiation and concurrence with the determination that the proposed Benicia-Martinez Bridge construction (HDA-CA, File # 04-CC-680-23.8/25.5, Document # P33554) across the Carquinez Strait, Solano and Contra Costa Counties, is not likely to adversely affect the endangered Sacramento River winter-run chinook salmon (*Oncorhynchus tshawtscha*), threatened Central Valley spring-run chinook salmon (*O. tshawtscha*), threatened Central Valley steelhead (*O. mykiss*), Central California Coast steelhead (*O. mykiss*), or their critical habitats, pursuant to the Endangered Species Act of 1973, as amended (ESA).

In a March 12, 1996 letter, your office requested Section 7 consultation regarding the effects of the proposed construction of a new Benicia-Martinez Bridge, parallel to the existing Benicia-Martinez bridge currently undergoing seismic retrofitting, on the endangered Sacramento River winter-run chinook salmon (*Oncorhynchus tshawytscha*) and its designated critical habitat. In addition to construction of the new bridge, adjacent roadways were proposed to be widened and interchanges modified. In a letter dated May 28, 1996, the National Marine Fisheries Service (NMFS) concluded consultation with the determination that the proposed project was not likely to adversely affect the Sacramento River winter-run chinook salmon, or its critical habitat.

In a letter dated September 29, 2000, your office requested reinitiation of this consultation pursuant to the subsequently listed Central Valley spring-run chinook salmon (*O. tshawytscha*), Central Valley steelhead (*O. mykiss*), Central California Coast steelhead (*O. mykiss*), and their designated critical habitats. In addition, concurrence that two additional activities not considered in our May 28, 1996 consultation; dredging of a 2000-foot wide channel (approximately 50,000 cubic yards of material) between the Maritime Administration Suisun Bay Reserve Fleet and the new bridge, and the installation of large diameter piles and cofferdams, would not adversely affect the Sacramento River winter-run chinook salmon, nor the three species listed subsequent to your 1996 consultation.

The Carquinez Strait is the sole migratory route between San Pablo Bay and the freshwater spawning habitat of the Sacramento River winter-run chinook salmon, Central Valley spring-run chinook salmon, and Central Valley steelhead. In addition, the Carquiniz Bridge is on western periphery of the Central California Coast steelhead Evolutionary Significant Unit (ESU), whose range includes San Pablo Bay and its tributaries. Disturbance or modifications to existing habitat may affect upstream migrating adult salmonids and out-migrating juveniles if conducted during migratory periods. To avoid impacts on listed salmonids, the U.S. Department of Transportation proposes to complete open water dredging between July 1 and October 31. Your letter does not indicate when the proposed coffer dams and piles will be constructed in shallow water (less than three meters deep), however, the NMFS believes that to adequately avoid affecting listed salmonids, construction of coffer dams, as with dredging, must occur between July 1 and October 31.

Based on the avoidance of listed salmonids by the timing of in-water construction, NMFS concurs with your determination that the proposed project, including dredging and placement of coffer dams, is not likely to adversely affect the Sacramento River winter-run chinook salmon, Central Valley spring-run chinook salmon, Central Valley steelhead, Central California Coast steelhead, or their critical habitat. This concurrence is based on the project, as described in your September 29, 2000 letter and the accompanying California Department of Transportation (Caltrans) letter dated June 14, 2000, and a November 6, 2000 telephone conversation between Mr. Chuck Morton of Caltrans and Ms. Martha Volkoff of my staff. Therefore, unless in-water work cannot be accomplished within this window, additional activities not previously considered for the proposed project are added, new information reveals that the proposed action may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the ESA is necessary.

We appreciate your continued cooperation in the conservation of listed species and their habitat, and look forward to working with you and your staff in the future. If you have any questions regarding this response, please contact Ms. Martha Volkoff in our Sacramento Area Office, 650 Capitol Mall, Suite 8-300, Sacramento, CA 95814. Ms. Volkoff may be reached by telephone at (916) 930-3600 or by FAX at (916) 930-3629.

Sincerely,

for Rebecca Lent, Ph.D.
Regional Administrator

cc: NMFS-PRD, Long Beach, CA
Mr. Calvin Fong, USACOE, San Francisco Regulatory Branch, 333 Market Street, San Francisco, CA 94105-2197
Mr. Chuck Morton, Caltrans, P.O. Box 23660, Oakland, CA 94623-0660
Ms. Joan Bollman, U.S. Department of Transportation, 980 Ninth Street, Suite 400, Sacramento, CA 95814-2724

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OCT 1 2 1994

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
211 MAIN STREET
SAN FRANCISCO, CALIFORNIA 94105-1905

OCT 0 7 1994

Regulatory Branch

Mr. Joe Browne
California Department of Transportation
District 4
P.O. Box 23660
Oakland, CA 94623-0060

Attention: Stephen Yokoi, Environmental Planning Branch, North

Dear Mr. Browne,

In response to your letters dated July 15, 1994 and September 29, 1994 requesting formal concurrence by the Corps of Engineers per Memorandum of Understanding (MOU) under NEPA/Section 404 Integration Process, the Corps of Engineers submits the following:

Based on the material provided July 15, 1994 and the changes provided September 29, 1994, the Corps of Engineers concurs with the "purpose and need", "criteria for alternative selection" and "alternatives considered and eliminated".

If you have any questions, please contact Jennifer Gillies at (415) 744-3025.

Sincerely,

Calvin C. Fong
Chief, Regulatory Branch

SEP 1 4 1994

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
211 MAIN STREET
SAN FRANCISCO, CALIFORNIA 94105 – 1905

SEP 09 1994

EXECUTIVE OFFICE
94 SEP 14 PM 1:29

Regulatory Branch

Mr. Joe Browne
California Department of Transportation
District 4
P.O. Box 23660
Oakland, CA 94623-0060

Attention: Stephen Yokoi, Environmental Planning Branch, North

Dear Mr. Browne,

In response to your letter dated July 15, 1994, in which you requested formal concurrence by the Corps of Engineers per the Memorandum of Understanding (MOU) under the NEPA/Section 404 Integration Process, the Corps of Engineers submits the following:

Based on the material provided July 15, 1994, the Corps of Engineers is able to concur with the "purpose and need" and the "criteria for alternative selection". However, the Corps is unable to concur with the range of "project alternatives evaluated in the SDEIS". The Corps is unable to determine that certain alternatives are not reasonable based on the estimated cost information provided. The estimated acceptable cost range of the reasonable alternatives should be included for comparison of those alternatives being eliminated. For example, an estimated percentage or difference in cost needs to be included in the "New Bridge Between Existing Vehicular and Rail Bridges" and "Bridge Widening Alternative" instead of simply citing "increased costs". It is important to include or cite the methods used to establish the estimated cost for each alternative. Also, please provide Section 3.1 (Preferred Alternative), as it was not included.

Once this information is provided, the Corps will decide whether or not to concur on the "project alternatives evaluated in SDEIS". If you have any questions please contact Jennifer Gillies at (415)744-3025.

Sincerely,

Calvin C. Fong
Chief, Regulatory Branch

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
333 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94105-2197

REPLY TO
ATTENTION OF:

JUL 09 1997

Regulatory Branch (1145b)

SUBJECT: File No. 21392N Benicia-Martinez Bridge

Mr. Nino Cerruti
California Department of Transportation
P.O. Box 23660
Oakland, California 94623

Dear Mr. Ceruti:

We are writing in response to your September 26, 1996, letter requesting the Corps preliminary concurrence that the modified East Bridge alternative is the least damaging practicable alternative (LEDPA). This alternative consists of the realignment of the East Bridge Alternative described in the Supplemental Draft Environmental Impact Statement/Environmental Impact Report for the Benicia-Martinez Bridge Project, Contra Costa and Solano Counties, California dated March 1995. The LEDPA is a proposed new concrete-box girder bridge approximately 70 meters east of the railroad bridge on the southern end and 125 meters east of the railroad bridge on the northern end of the strait. This bridge would be 2,680 meters long and 25 meters wide. A toll-plaza and realignments of I-680 are also proposed.

In accordance the National Environmental Policy Act and Clean Water Act Section 404 Memorandum of Understanding, the Corps does preliminarily agree;

a. the modified East Bridge alternative is the LEDPA,

b. this alternative will not significantly degrade the aquatic environment, and

c. as explained in our December 23, 1996 letter the revised mitigation plan is acceptable as a conceptual mitigation plan.

At the completion of the Environmental Impact Statement process, before the Corps can issue a permit, a complete mitigation plan must be submitted, review and approved by the Corps.

If you have any questions, please call Debra O'Leary of my staff at (415) 977-8442. If you wish to write please address all correspondence to the District Engineer, Attention: Regulatory Branch, and refer to file number 21392N.

Sincerely,
ORIGINAL SIGNED
By
Calvin C. Fong
For
Max R. Blodgett
Chief, Construction-Operations
Division

CF:
~~CESPN-CO-RN (O'LEARY)~~
CESPN-DE Rdg File
CESPN-CO Rdg File
CESPN-CO-R Rdg File

O'LEARY/kl DAO
CESPN-CO-RN
415-977-8442
9 JULY 1997

MORELAND BM for
CESPN-CO-RN

FONG
CESPN-CO-R

BLODGETT
CESPN-CO for 7/9

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
333 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94105-2197

REPLY TO
ATTENTION OF:

DEC 23 1996

Regulatory Branch (1145b)

SUBJECT: File No. 21392N, Benicia Martinez Bridge

Mr. Nino Ceruti
California Department of Transportation
P.O. Box 23660
Oakland, California 94623

Dear Mr. Ceruti:

We have received and reviewed several iterations of the Conceptual Mitigation Plan for the Benicia-Martinez Bridge Replacement project. We find that the Plan, with the revisions sent to our offices by facsimile on October 3, 1996, is acceptable as a conceptual mitigation plan pursuant to the FHWA MOU. We understand that you are committed, at a minimum, to the successful creation of 18.1 acres of tidal marsh, 3.0 acres of transition to uplands and 1.7 acres of buffer upland habitat. At the completion of the EIS process, and before the U.S. Army Corps of Engineers (USACE) can issue a permit, a complete mitigation plan must be submitted, reviewed, and approved by the USACE.

We have also reviewed your delineation of USACE jurisdiction (Benicia Industrial Site Pickleweed Mitigation Site EA 006010, undated) and find that all areas shown on the map are likely to meet wetland criteria, not just the area along the railroad tracks. Should your staff wish to assess the site during this precipitation season to observe the presence or absence of ponding or saturation, the San Francisco District will again review your data and may be willing to accept a lesser area as USACE jurisdiction for the site.

If you have questions, please call Sharon L. Moreland of our Regulatory Branch at telephone 415-977-8440. If you wish to write, please address all correspondence to the District Engineer, Attention: Regulatory Branch, and refer to the file number at the head of this letter

Sincerely,
ORIGINAL SIGNED
By
Calvin C. Fong
For
Max R. Blodgett
Chief, Construction-Operations
Division

Copies Furnished:

US F&WS, Sacramento, CA
US EPA, San Francisco, CA
CA BCDC, San Francisco, CA
US CG, Alameda, CA
US FHWA, San Francisco, CA

CF:
CESPN-CO-RN (MORELAND)
CESPN-DE Rdg File
CESPN-CO Rdg File
CESPN-CO-R Rdg File

MORELAND/kl
CESPN-CO-RN
7-8440
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FONG
CESPN-CO-R

KEESLING
CESPN-CO

BLODGETT
CESPN-CO 12/13

United States Department of the Interior
Fish and Wildlife Service
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

IN REPLY REFER TO:
1-1-01-F-28

January 9, 2001

Mr. Michael Ritchie
U.S. Department of Transportation
Federal Highway Administration
California Division
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

Subject: Reinitiation of Formal Endangered Species Consultation and Amendment to the Biological Opinion (File # 1-1-96-F-40) for the New Benicia-Martinez Bridge Project

Dear Mr. Ritchie:

This is in response to your letter dated December 18, 2000, requesting a modification of the "in water" work window to complete the new Benicia-Martinez bridge project. At issue are potential impacts to the federally threatened delta smelt (*Hypomesus transpacificus*), its critical habitat, and the federally threatened Sacramento splittail (*Pogonichthys macrolepidotus*) (splittail). The U.S. Fish and Wildlife Service prepared a biological opinion for this project on August 19, 1996, (Service File #1-1-96-F-40).

Our opinion was based on the proposal to work in waters 3-meters or less between December 1 and March 31, to minimize impacts to delta smelt and splittail. However, because of unforseen circumstances, you are requesting a modification of the work window to July 1 through October 31, of any given year. We have reviewed the enclosed California Department of Transportation letter dated November 27, 2000, and conclude that impacts beyond those previously considered are not likely to occur. Therefore, provided all proposed measures to avoid or minimize impacts are implemented, we concur with your request to extend the timing window to July 1 through October 31, and, unless new information reveals effects of the proposed action that may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Endangered Species Act of 1973 is necessary.

If you have any questions, please contact Scott Cotter or Ken Sanchez at (916) 414-6625.

Sincerely,

Karen J. Miller
Chief, Endangered Species Division

cc: Chuck Morton, Caltrans, Oakland, CA

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

August 1, 2001

In Reply Refer To:
SWR-00-SA-0222:MEA

Michael G. Ritchie
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
California Division
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

Dear Mr. Ritchie:

This is in response to a request from Mr. Moshen Pazooki of the California Department of Transportation (Caltrans) for the National Marine Fisheries Service (NMFS) to amend our concurrence letter on the Benicia-Martinez Bridge Construction Project (HDA-CA, File# 04-CC-680-23.8/25.5) to allow in-water construction between December 1, 2001 and March 31, 2002. Our concurrence letter was dated November 15, 2001. We also received a letter from Caltrans, dated July 30, 2001, requesting the revised construction window.

Based on telephone conversations with Mr. Pazooki, we understand that, during the December 1 through March 31 construction period, Caltrans will be installing pilings and cofferdams around the new pier foundations sites. Once the pilings, cofferdams and associated trestles are in place, they will remain in place until bridge construction is completed and all in-water work will occur inside the cofferdams. Dredging of the new channel for the Suisun Bay Reserve Fleet (SBRF) will also occur during the December 1 through March 31 in-water construction period.

Due to the location of the planned construction activities, the large size of the active river channel at the construction site, and the water depth at the location of the channel dredging (>26 ft.) we anticipate that planned in-water construction will have minimal effect on migrating salmon and steelhead. Therefore, we approve of the requested amendment to allow in-water construction (including the installation of piles, cofferdams, and dredging) for the Benicia-Martinez Bridge Construction Project between December 1, 2001 and March 31, 2002.

If you have any questions regarding this response, please contact Mr. Michael Aceituno, Supervisor, Sacramento Area Office, 650 Capitol Mall, Suite 8-300, Sacramento, CA 95814. Mr. Aceituno may be reached by telephone at (916) 930-3600 or by Fax at (916) 930-3629.

Sincerely,

for Rebecca Lent, Ph.D.
Regional Administrator

cc: NMFS-PRD, Long Beach, CA
Moshen Pazooki, Caltrans, District 4, Oakland, CA
Victoria Alvarez, COE, San Francisco, CA

N/C

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
TDD (510) 286-4454

June 29, 2001

Mr. Bruce H. Wolfe
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Attention: Mr. Stephen Berger

Subject: Final Mitigation Plan New Benicia-Martinez Bridge Project
File No. 2128.03 (SLB); 2118.03
Site No. 02-07-C0148

Dear Mr. Wolfe:

This letter is a follow-up to our submittals to the Board dated March 5, 2001, and June 14, 2001. The March 5 submittal consisted of the Wetland Mitigation, Monitoring and Action Plan for the above project. The June 14 submittal made minor revisions to the text of the plan, with the Planting Plan and Sheets 1, 2, and 3 remaining unchanged.

Subsequent to the March 5 submittal, Caltrans obtained review comments from Ms. Carmen Thomas of USFWS and Mr. Fred Botti of CDFG on the Wetland Mitigation Plan (Habitat Restoration Plan). No comments were received from the Board staff.

Based on comments received to date, Caltrans is prepared to implement the Habitat Restoration Plan with the following minor revisions:

1. The final grading for the 22.8 acre site owned by Caltrans will be consistent with the proposal of March 5. To address concerns raised by Ms. Carmen Thomas, Caltrans will make every effort to minimize the height of the berm along the southwest side of the Union Pacific Railroad levee, south of the 5-pipe culvert crossing.
2. To address issues raised by Ms. Carmen Thomas regarding inclusion of red oats (Avena sativa 'rubra') in the erosion control seed mix, the revised seed mix will replace red oats with sterile wheatgrass (Triticum sp. 're-green'). This revised seed mix has been used on other habitat restoration sites without invasive results.
3. To address public and predator access prevention issues raised by the USFWS, Caltrans will install a 4-foot high black vinyl-clad chainlink fence inside Caltrans property, along the Industrial Way frontage on the west side of site. In addition, Caltrans will provide native planting consisting of California Rose (Rosa californica sp.), toyon (Heteromeles arbutifolia) and California lilac (Ceanothus sp.). These plants are being proposed to address aesthetic issues along the street frontage for the City of Benicia, while maintaining a native plant palette.

4. In compliance with previous commitments for this project, Caltrans will also install viewing platforms, interpretive plaques and benches along Industrial Way. These items will be installed within Caltrans property on the street side of the proposed fence. Caltrans will determine the exact number and locations of these public amenities in consultation with the City of Benicia.

Caltrans would like to thank all the agencies that have participated in resolving the numerous issues associated with this habitat restoration project. We look forward to implementing the mitigation plan at the earliest possible time.

Should you have any questions or need additional information, please contact Mo Pazooki at (510) 286-5118.

Sincerely,

HARRY Y. YAHATA
District Director

By:

ELIZABETH WIECHA
Project Manager
Benicia-Martinez Bridge Project

Attachment

cc: Carmen Thomas, USFWS
Fred Botti, CDFG
Debra O'Leary, ACOE
Nathan Newell, BCDC

bcc: CMorton ... Env. Planning
DYam ... Landscape Architecture
LWiecha/ASoares/MPazooki, files

AS:as